COMPACT DISC PLAYER
# DP-M6010
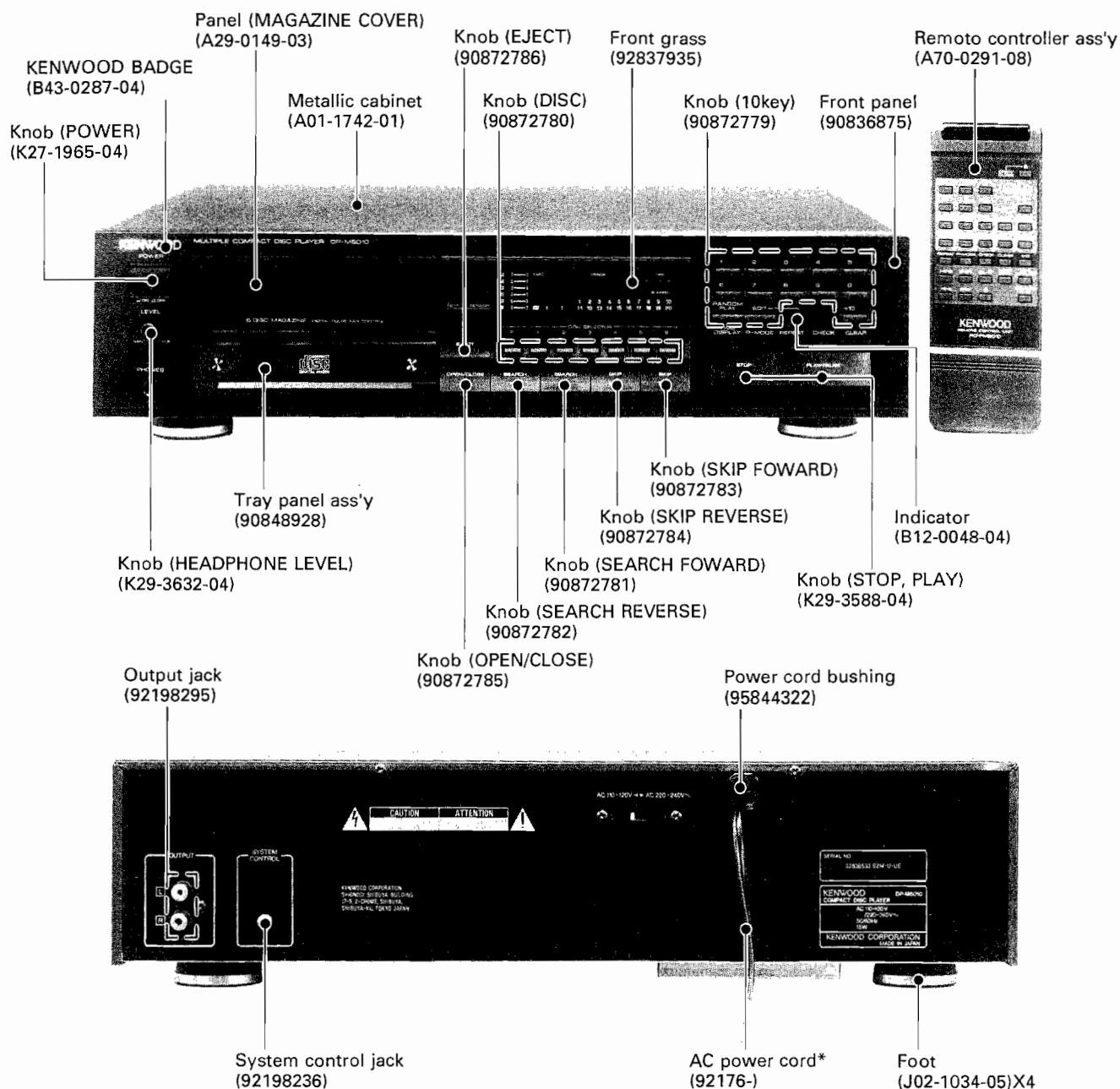# SERVICE MANUAL

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**V10261**

# KENWOOD

© 1989-8 PRINTED IN JAPAN
B51-3810-00 (O) 1950

Panel (MAGAZINE COVER) (A29-0149-03)
Knob (EJECT) (90872786)
Front grass (92837935)
Remoto controller ass'y (A70-0291-08)
KENWOOD BADGE (B43-0287-04)
Metallic cabinet (A01-1742-01)
Knob (DISC) (90872780)
Knob (10key) (90872779)
Front panel (90836875)
Knob (POWER) (K27-1965-04)

Tray panel ass'y (90848928)

Knob (SKIP FOWARD) (90872783)
Knob (SKIP REVERSE) (90872784)
Indicator (B12-0048-04)
Knob (HEADPHONE LEVEL) (K29-3632-04)
Knob (SEARCH FOWARD) (90872781)
Knob (STOP, PLAY) (K29-3588-04)
Knob (SEARCH REVERSE) (90872782)
Knob (OPEN/CLOSE) (90872785)

Output jack (92198295)
Power cord bushing (95844322)

System control jack (92198236)
AC power cord* (92176-)
Foot (J02-1034-05)X4

**\*Refer to parts list on page 39.**

# DP-M6010

# CONTENTS

2

# CONTROLS AND INDICATORS

Mode indicators

PGM indicator

DISC number indicator

TRACK number indicator

Disc indicators

TIME counter

"Music calendar" array

Pause indicator

Play indicators
The indicator of the disc being played lights.

POWER switch

Magazine tray

Display panel

DISC SELECTOR keys

Numeric keys ( 1 ~ 0 , +10 )
Press to enter track numbers or time.

PHONES jack/LEVEL control

PLUS ONE tray

STOP key ■

SKIP keys ( |◄◄ , ►►| )
Press to skip to a track located in
the forward or reverse direction.

SEARCH keys ( ◄◄ , ►► )
Press to fast-forward or fast-reverse
the play position.

PLAY/PAUSE key ►/II
Press to start play or to pause it.
The function of the key alternates
with each press.

EJECT key ▲
Press to eject the disc magazine.

OPEN/CLOSE key ▲
Press to open or close the PLUS ONE tray.

EDIT key
Used in editing.

RANDOM PLAY key
Press to play tracks in a random order.

EDIT indicator

CLEAR key
Press to clear the program.

TIME DISPLAY key
Press to vary the time display mode.

CHECK key
Press to check the programmed contents.

P-MODE key
Press to alternate between the Programmed
play mode and the Manual play mode.

REPEAT key
Press for repeat play.

# DP-M6010

## DISASSEMBLY FOR REPAIR

**Remove the cover to the following operations.**
1. Turn the power ON ( ❶ ), and press the OPEN/
   CLOSE switch ( ❷ ) to open the tray ( ❸ ).
   After this turn the power off again.
2. Remove the two screws ( ❹ ) holding the tray panel
   to the back side of the tray, and take out the tray panel
   ( ❺ ).
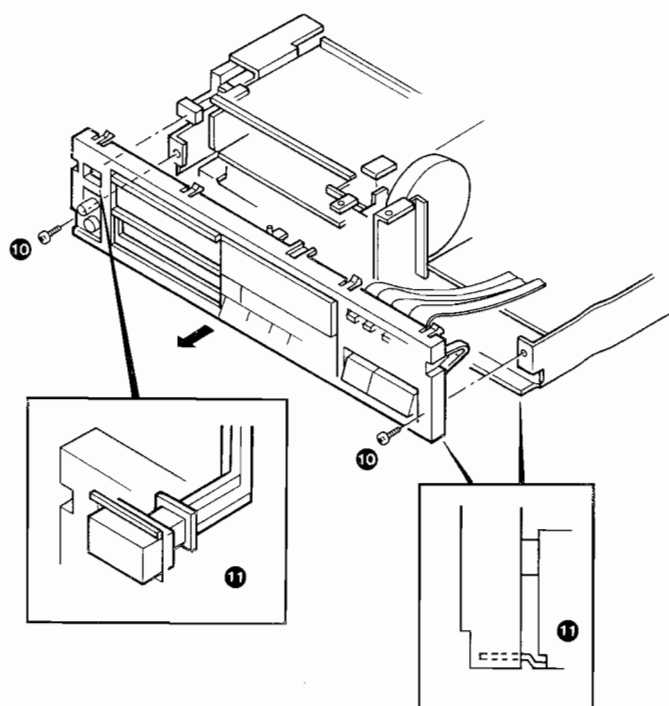   Close the tray by gently pushing it with your hand.
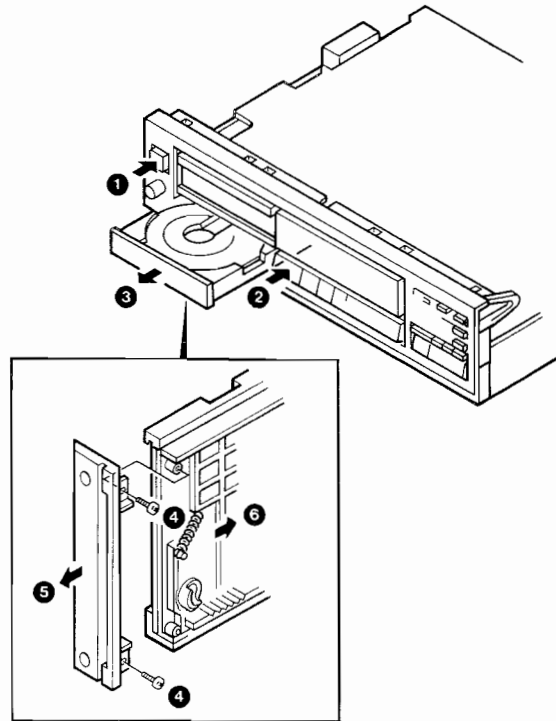
3. Remove the three screws ( ❼ ), disengage the four
   claws ( ❽ ), and remove the front panel.
4. Remove the two screws ( ❾ ), and remove the ground
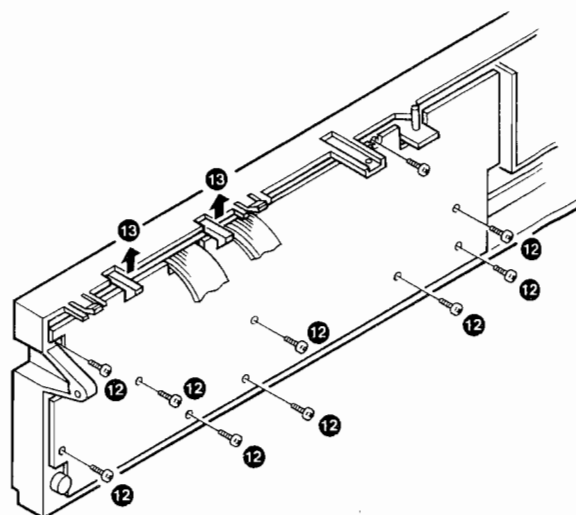   wire.

4
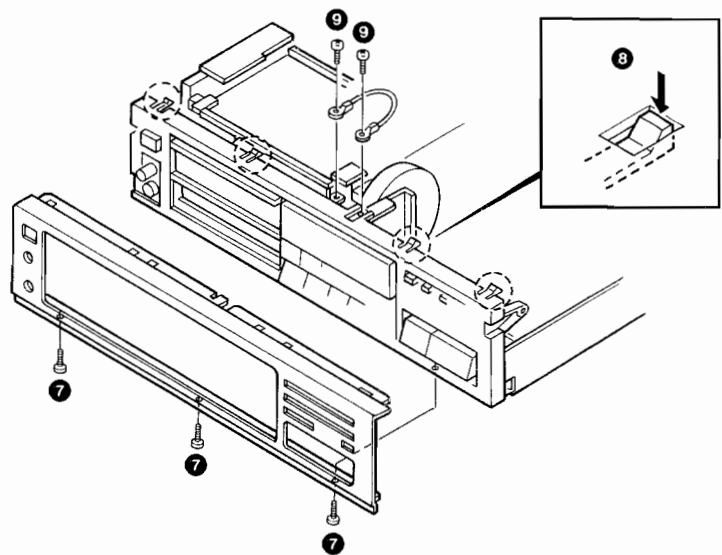
## DISASSEMBLY FOR REPAIR

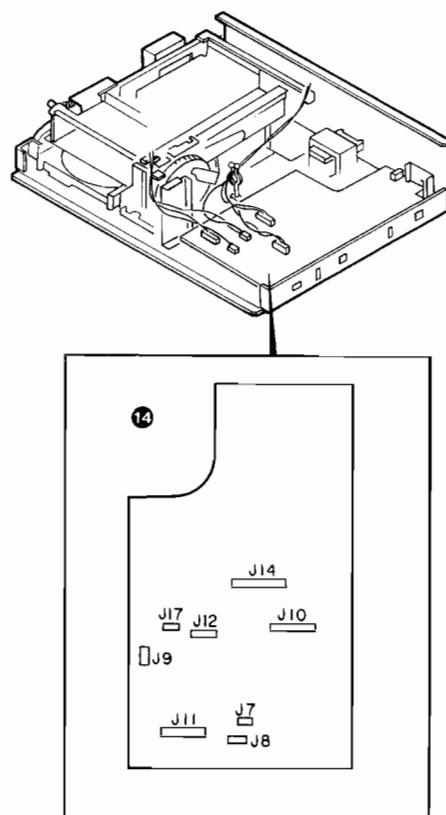5. Remove the two screws ( ❿ ), and take out the sub panel from the POWER switch knob and chassis ( ⓫ ).

6. Remove the ten screws ( ⓬ ), disengage the two claws ( ⓭ ), and remove the display unit.

# DP-M6010

## DISASSEMBLY FOR REPAIR

7. Disconnect the eight connectors ( ❶ ).
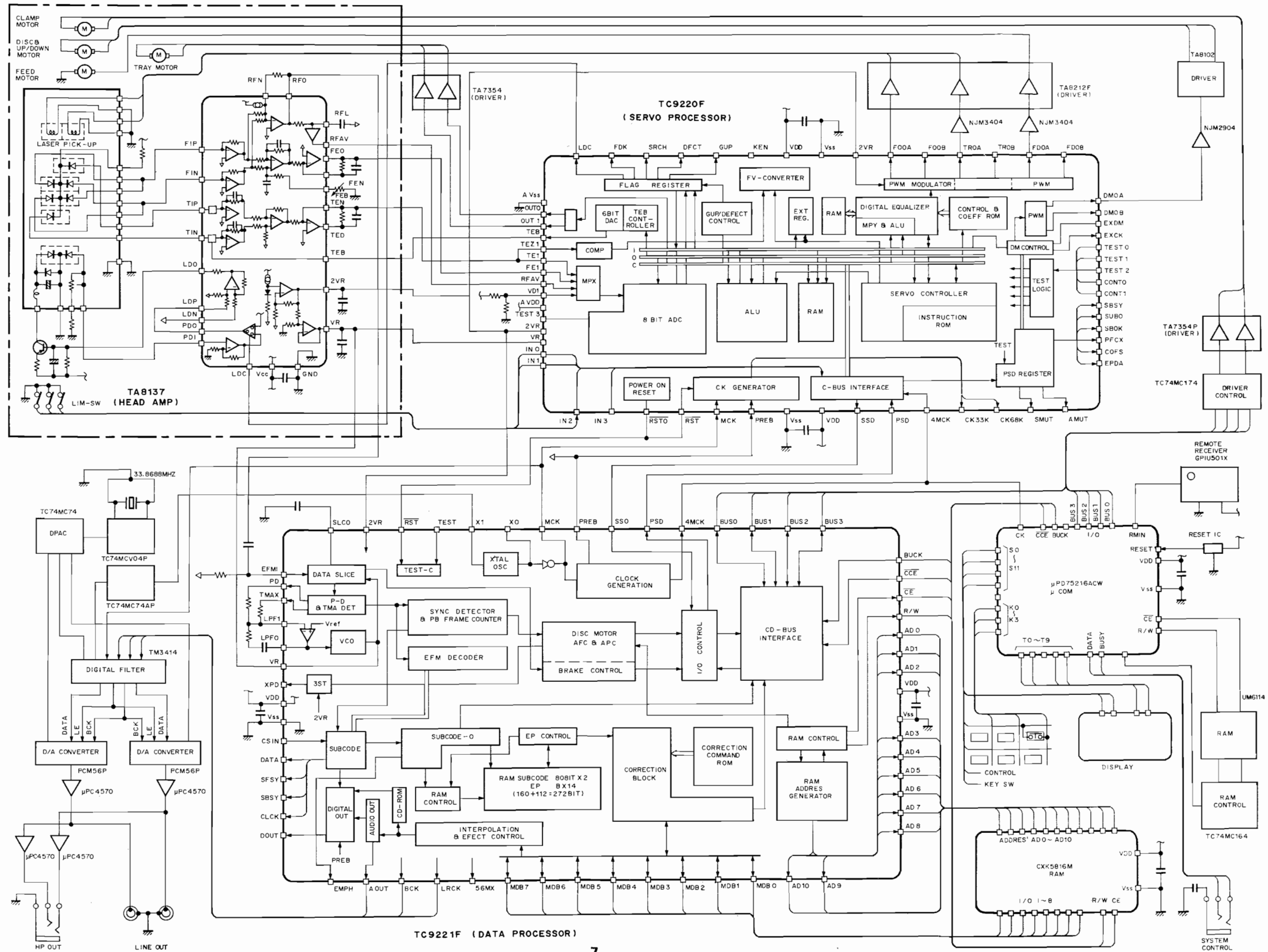
J14

J17 J12 J10

J9

J11 J7

J8

8. Remove the five screws ( ❶ ), holding the Mechanism Ass'y.
9. Remove the lead from the lead holder and lift the mechanism in the direction of the arrow ( ❶ ).
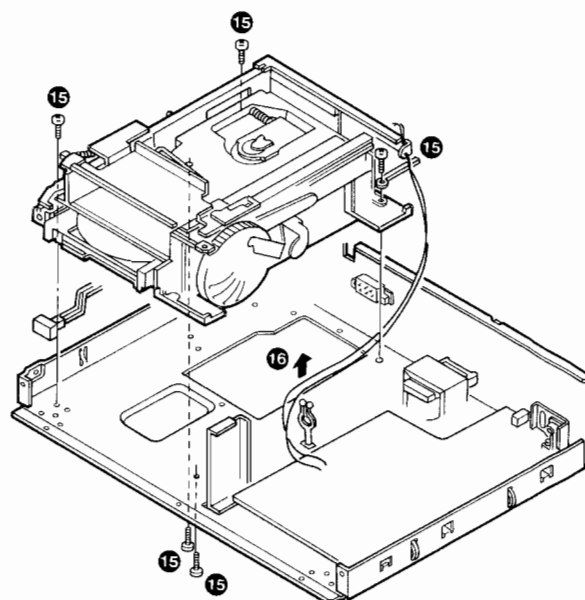
# DP-M6010    DP-M6010
## BLOCK DIAGRAM

## 1. Description of Components

### 1-1. RF PC UNIT

| Ref. No. | Part No. | Use/Function | Operation/Condition/Compatibility |
|---|---|---|---|
| Q101 | TA8137F | RF amplifier | Generation of focusing error signal and tracking error signal. Generation and phase compensation RF signal. |
| Q102 | 2SA950Y | Switch | Laser diode power supply switch. |

### 1-2. MAIN PC UNIT

| Ref. No. | Part No. | Use/Function | Operation/Condition/Compatibility |
|---|---|---|---|
| Q201 | GP1U501X | Remote sensor | Remote sensor unit. |
| Q202 | µPC4570C | Op amplifier | Haedphone amplifier. |
| Q281 | TC4085BP | Invert gait | Receive the tray switch ON and program play, if with flaw, to turn OFF the remote sensor and system control. |
| Q282 | 2SC2458(GR) | Switch | Remote sensor muting switch. |
| Q283 | | | System control muting switch. |
| Q301 | TC9220F | Servo processor LSI | Generates pulses for the focusing servo, tracking servo and feed servo. |
| Q302 | TC9221F | Signal processor LSI | Handles demodulation, correction and interpolation of EFM data, PLL circuit. Processes all digital signals, including the CLV servo signal. |
| Q303 | TA8102P | Driver | Disc and up/down motor driver. |
| Q304 | TA7354P | Driver | P1 tray motor driver. |
| Q305 | TA8212F | Driver | Focus coil, tracking coil and feed motor driver. |
| Q306 | NJM3404AD | Op amplifier | (1) Feed motor drive. (2) Tracking coil drive. |
| Q307 | NJM2904D | Op amplifier | (1) Disc and up/down motor drive. (2) Up/down motor drive. |
| Q308 | µPC4570C | Op amplifier | Eject solenoid driver. |
| Q309 | TA7354P | Driver | Calmp motor driver. |
| Q310 | µPD75216ACW-239 | Microprocessor | Handles the display, key input processing and servo IC control. |
| Q311 | LC3514 UM6114 | S-RAM | Memorizes the TOC data and PROG RAM data. |
| Q312 | TC74HC164AP | Logic IC | 8-bit shift register. |
| Q313 | CXK5816M | S-RAM | Signal processor RAM (16K). |
| Q314 | 2SC2878(B) | Switch | Feed search switch. |
| Q315 | 2SC2458(GR) | Switch | Tracking gain switch. |
| Q316 | 2SC2120(Y) | Driver | Solenoid driver. |
| Q317 | 2SC2458(GR) | Driver | Solenoid driver. |
| Q318 | 2SC2458(GR) | Switch | Disc motor switch. |
| Q319 | 2SC2458(GR) | Switch | Up/down motor switch. |
| Q320 | 2SA1048(GR) | Switch | Up/down motor switch. |
| Q321 | 2SA1048(GR) | Switch | Solenoid driver. |
| Q322 | 2SA1048(GR) | Switch | De-emphasis switch. |
| Q324 | 2SA473(Y) | Switch | Solenoid driver. |
| Q325 | M51943BSL-T | Reset IC | Reset IC for the microprocessor. |
| Q401 | TC74HC174AP | D flip-flap | Clamp motor flip-flap. |
| Q402 | 2SC1923(O) | Switch | LRCK clock pulse switch. |
| Q403 | TC74HC74AP | D flip-flap | D flip-flap (DATA, LRCK, CLOCK). |
| Q404 | TC74HCU04P | Inverter | Main clock oscillator. |
| Q405 | TC74HC74AP | D flip-flap | D flip-flap (clock). |
| Q406 | 2SC2458(GR) | Switch | Focus OK switch. |
| Q501,502 | PCM56P | D/A converter | Converts the digital data into analog signals. |
| Q503 | YM3414 | Digital filter | 8x over-sampling. |
| Q504~506 | µPC4570C | Op amplifier | Low pass filter and emphasis. |
| Q507,508 | 2SK365(BL) | FET switch | De-emphasis switch. |
| Q509,510 | 2SC2878(B) | Switch | Muting switch. |

| Ref. No. | Part No. | Use/Function | Operation/Condition/Compatibility |
|---|---|---|---|
| Q901 | MC7808CT | Voltage regulators | +8V voltage regulators. |
| Q902,903 | MC7805CT | Voltage regulators | +5V voltage regulators. |
| Q904 | MC7905CT | Voltage regulators | –5V voltage regulators. |
| Q905,906 | 2SA1048(GR) | Muting | Power ON/OFF muting. |
| Q907 | 2SC2458(GR) | Muting | Power ON/OFF muting. |
| Q908 | 2SC2878(B) | Muting | Power ON/OFF muting. |

## 2. RF AMP TA8137F (RF PC UNIT : Q101)

The TA8137 is the IC developed to generate the focus signal and the tracking error signal for the 3-beam pickup in the CD player.

The TA8137F is capable of forming a servo system with a lesser number of externally connected components by a combined used with the TC9220F (digital servo processor).

**Features:**
- RF AV amplifier built-in for on-track information and defect detection.
- Capable of automatically adjusting the tracking error balance by a combined use with the TC9220F.
- Built-in APC circuit.

### 2-1. Block diagram
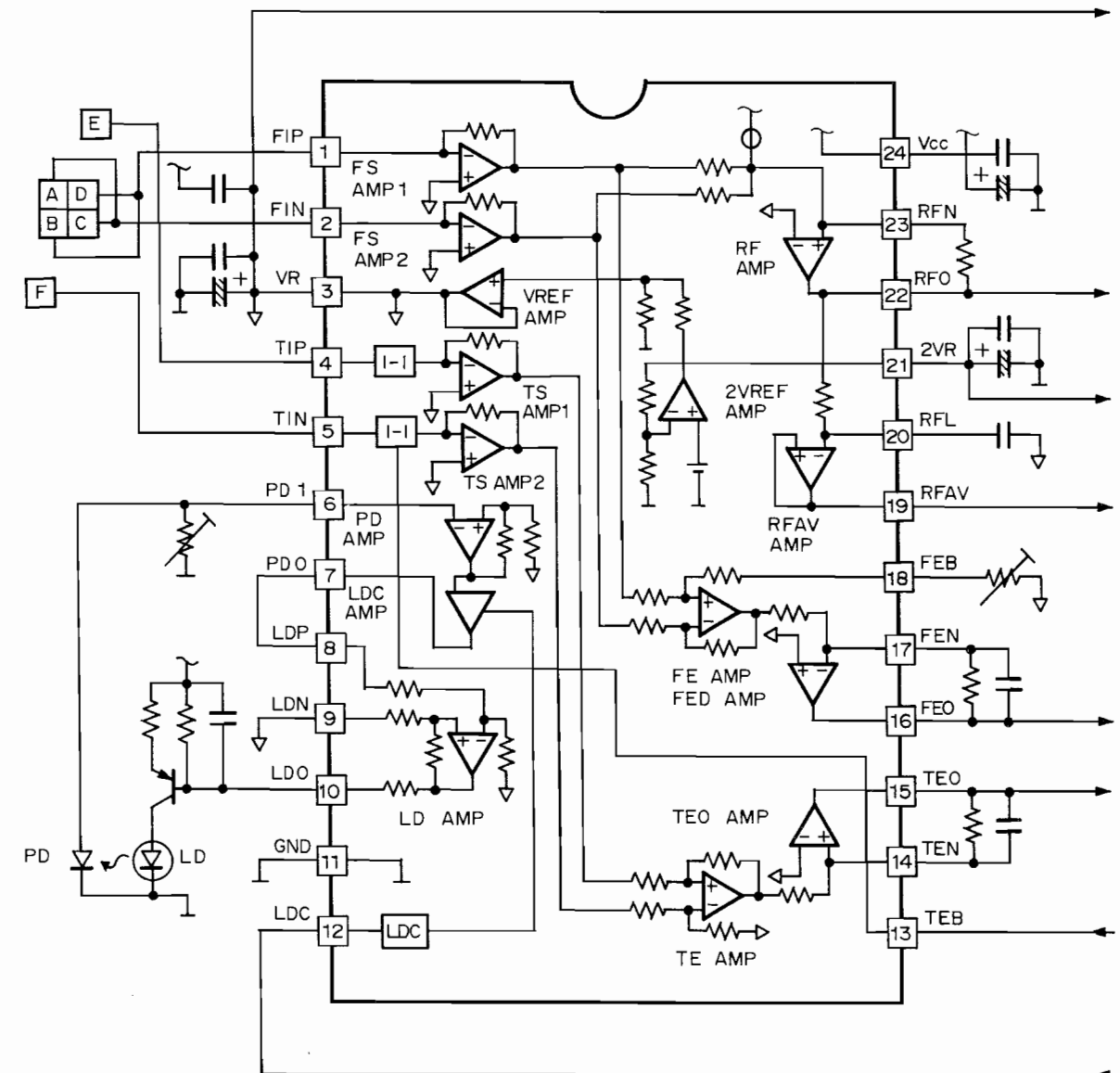
# CIRCUIT DESCRIPTION

## 2-2. Explanation of terminals

| Pin No. | Pin Name | I/O | Function | Remarks |
|---|---|---|---|---|
| 1 | FIP | I | Main beam I-V amplifiers 1/2 input pins. | Connected to PIN diodes B+D. |
| 2 | FIN | | | Connected to PIN diodes A+c. |
| 3 | VR | O | Reference voltage output pin (+2V). | |
| 4 | TIP | I | Sub-beam I-V amplifiers 1/2 input pins. | Connected to PIN diode F. |
| 5 | TIN | | | Connected to PIN diode E. |
| 6 | PDI | I | Photodiode amplifier input pin. | Connected to monitor photodiode. |
| 7 | PDO | O | Photodiode amplifier output pin. | Connected to laser diode amplifier. |
| 8 | LDP | I | Laser diode amplifier normal phase input pin. | |
| 9 | LDN | I | Laser diode amplifier reverse phase input pin. | |
| 10 | LDO | O | Laser diode amplifier output pin. | Connected to laser diode circuit. |
| 11 | GND | – | GND pin. | |
| 12 | LCD | I | Laser diode control input pin. | |
| 13 | TEB | I | Tracking error balance adjustment input pin. | |
| 14 | TEN | I | Tracking error output amplifier reverse phase input pin. | Connected to TEO through feedback CR. |
| 15 | TEO | O | Tracking error output amplifier output pin. | |
| 16 | FEO | O | Focus error output amplifier output pin. | |
| 17 | FEN | I | Focus error output amplifier reverse phase input pin. | Connected to FEO through feedback CR. |
| 18 | FEB | I | Focus error balance adjustment input pin. | Connected with adjustment semi-fixed VR. |
| 19 | RFAV | O | RF average amplifier output pin. | |
| 20 | RFL | I | RF average amplifier normal phase input pin. | Connected with high-cut capacitor. |
| 21 | 2VR | O | 2-fold reference voltage output pin (+4V) | |
| 22 | RFO | I | RF amplifier output pin. | |
| 23 | RFN | I | RF amplifier reverse phase input pin. | Connected to RFO through feedback resistor. |
| 24 | VCC | – | Power supply pin (+5V) | |

# DP-M6010

## CIRCUIT DESCRIPTION

### 3. Servo signal processor TC9220F (MAIN PC UNIT : Q301)

The TC9220F is the CMOS LSI developed for digital servo control over the compact disc player.

This LSI can realize a CD player system with high function and simple configuration due to a combined use with servo IC TA8137F (bipolar) and data processor TC9221F (CMOS LSI).

**Features:**
- Greatly reduced number of externally connected components through employment of full digitalservo system.
- Ease at software development owing to built-in ROM of abundant servo control instructions.

- Built-in digital equalizer for computation for phase compensation with phase compensational coefficients meeting different pickups.
- PWN driver (4-channel) incorporated.
- Focus/tracking loop gain/offset automatically adjusted
- Tracking balance automatically adjusted.
- Built-in circuit to detect abnormality during play or search totally.
- High-speed search by search speed control circuit.
- Any mode selectable for search control.
- Auto kick search system best suited to cue/review.
- Low battery voltage detection/compensation circuit incorporated.
- CDV/LV compatible mode incorporated.

### 3-1. Block diagram
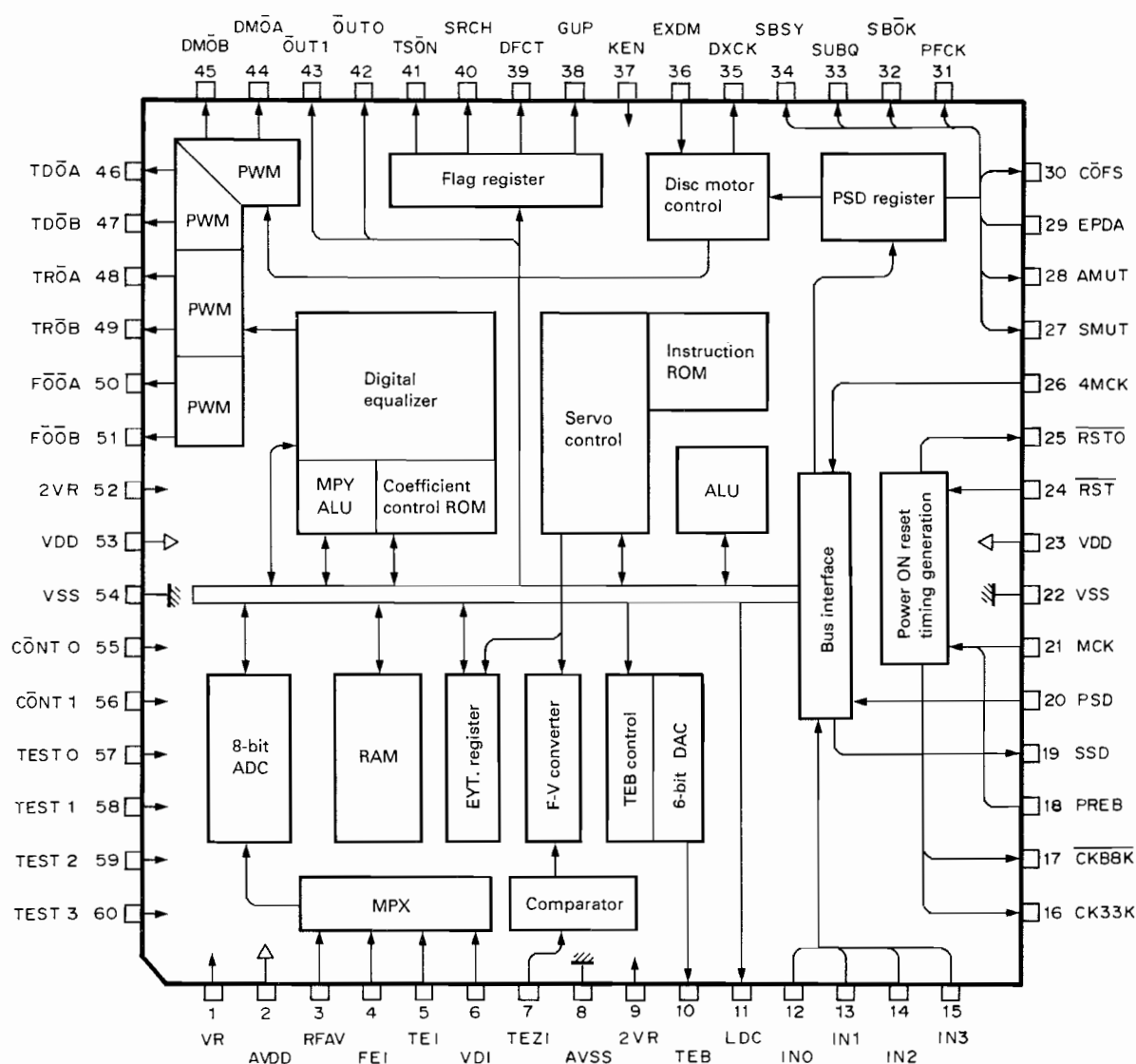
# CIRCUIT DESCRIPTION

## 3-2. Explanation of terminals

| Pin No. | Pin Name | I/O | Function |
|---------|----------|-----|----------|
| 1 | VR | – | Reference power supply voltage pin (2V). |
| 2 | AVDD | – | Analog power supply voltage pin. |
| 3 | RFAV | I | RF average signal input pin. |
| 4 | FEI | I | Focus error signal input pin. |
| 5 | TEI | I | Tracking error signal input pin. |
| 6 | VDI | I | Low battery voltage detection pin. |
| 7 | TEZI | I | Tracking error zero-cross input pin. |
| 8 | AVSS | – | Analog ground pin. |
| 9 | 2VR | – | Reference power supply voltage pin (4V). |
| 10 | TEB | O | Tracking error balance output pin. |
| 11 | LDC | O | Laser diode control signal output pin. |
| 12~15 | IN0~IN3 | I | General input pin. |
| 16 | CK33K | O | 33kHz clock output pin. |
| 17 | CK88K | O | 88kHz clock output pin. |
| 18 | PREB | I | Preable signal input pin. |
| 19 | SSD | O | Servo serial data input pin. |
| 20 | PSD | I | Processor serial data input pin. |
| 21 | MCK | I | Master clock input pin (16.9344MHz). |
| 22 | VSS | – | Ground pin. |
| 23 | VDD | – | Power supply voltage pin. |
| 24 | RST | I | Reset input pin. |
| 25 | RSTO | O | Reset output pin. |
| 26 | 4MCK | O | 4MHz clock input pin. |
| 27 | SMUT | O | Software mute output pin. |
| 28 | AMUT | O | Analog mute output pin. |
| 29 | EPDA | O | Processor internal status output pin. |
| 30 | COFS | O | Correction system frame sync signal output pin. |
| 31 | PFCK | O | Playback system frame sync signal output pin. |
| 32 | SBOK | O | Sub-code signal Q data CRC check, judgment result output pin. |
| 33 | SUBQ | O | Sub-code Q data output pin. |
| 34 | SBSY | O | Sub-code sync signal output pin. |
| 35 | DXCK | O | 2MHz clock output pin. |
| 36 | EXDM | I | Disc motor PWM data external set pin. |
| 37 | KEN | I | Kick enable input pin. |
| 38 | GUP | O | Gain up signal output pin. |
| 39 | DFCT | O | Defect detection output pin. |
| 40 | SRCH | O | Search signal output pin. |
| 41 | FOK | O | Focus OK signal output pin. |
| 42 | OUT0 | O | |
| 43 | OUT1 | O | |
| 44 | DMOA | O | Disc motor control PWM output pin. |
| 45 | DMOB | O | |
| 46 | FDOA | O | Feed motor control PWM output pin. |
| 47 | FDOB | O | |
| 48 | TROA | O | Tracking coil control PWM output pin. |
| 49 | TROB | O | |
| 50 | FOOA | O | Focus coil control PWM output pin. |
| 51 | FOOB | O | |
| 52 | 2VR | – | Reference power supply voltage pin (4V). |
| 53 | VDD | – | Power supply voltage pin. |
| 54 | VSS | – | Ground pin. |
| 55 | CONT0 | I | Control (test) input pin. Normally "H" or open for use. |
| 56 | CONT1 | I | |
| 57 | TEST0 | I | Test pin. Normally "H" or open for use. |
| 60 | TEST3 | I | |

# DP-M6010

## CIRCUIT DESCRIPTION

### 4. Digital signal processor TC9221F (MAIN PC UNIT : Q302)

The TC9221F is the CMOS LSI developed for sync separation, EFM signal demodulation and error detection/correction in a compact disc player system.

This LSI can materialize a CD player system with high function and simple configuration due to a combined use with servo IC TA8137F (bipolar IC) and servo processor TC9220F (CMOS LSI).

**Features:**

• Positive operation in sync pattern detection, sync signal protection or interpolation.

• Analog PLL/VCO circuit incorporated.
• Disc motor control circuit incorporated.
• All information processed by total six lines of 4 bus lines, 1 clock line and 1 chip select signal line through virtue of built-in microprocessor interface.
• C1 correction double and C2 correction triple by means of logic formula for CIRC correction.
• 16K SRAM or 256K DRAM for signal processing.
• Digital out CDROM format signal output.
• Audio surround data output (with 256K DRAM).
• Sub-code signal demodulation circuit incorporated.
• Free timing in reading of sub-code Q due to its built-in buffer RAM for 2 blocks.
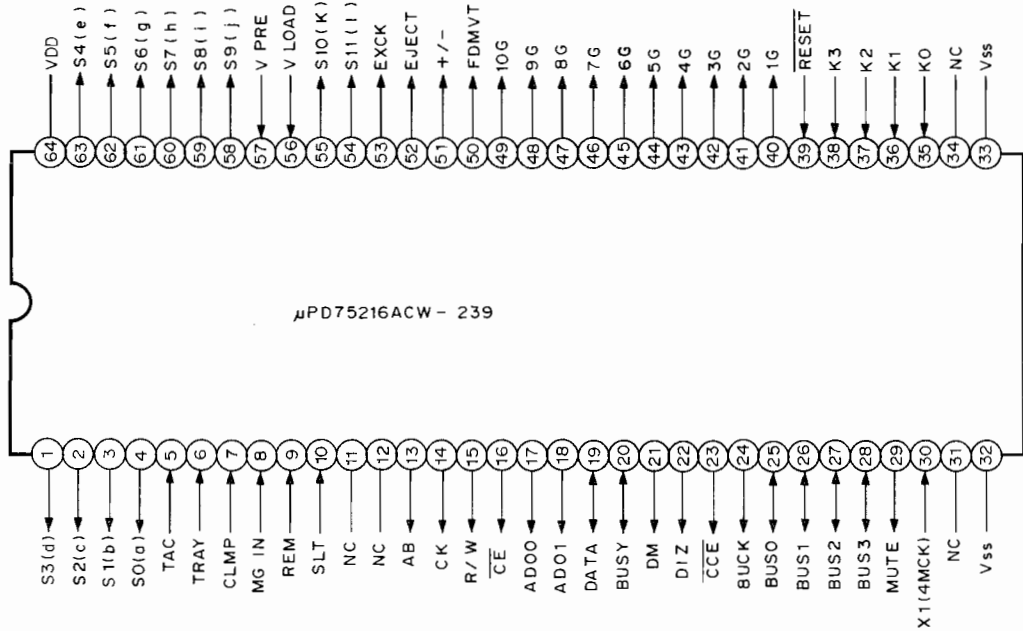
### 4-1. Block diagram
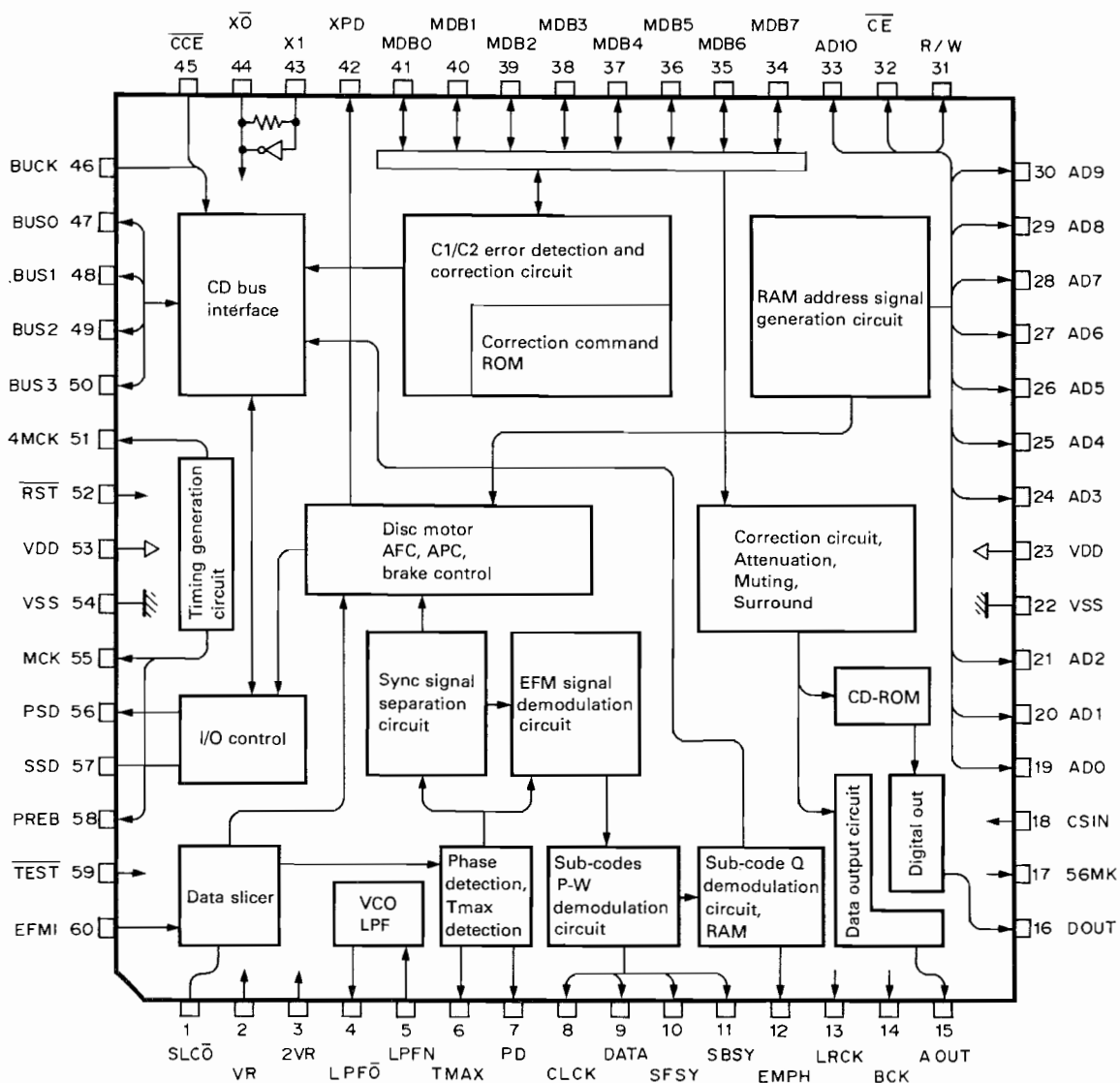
# CIRCUIT DESCRIPTION

## 4-2. Explanation of terminals

| Pin No. | Pin Name | I/O | Function |
|---------|----------|-----|----------|
| 1 | SCLO | I | Data slicer comparator level set pin. |
| 2 | VCOF | – | Built-in VCO input voltage control pin. |
| 3 | 2VR | – | Reference voltage power supply voltage (4V). |
| 4 | LPFO | O | Low pass filter amplifier output pin. |
| 5 | LPFN | I | Low pass filter amplifier nagative input pin. |
| 6 | TMAX | O | PLL frequency control signal output pin. |
| 7 | PD | O | PLL phase difference signal output pin. |
| 8 | CLCK | I | Sub-code read clock input pin. |
| 9 | DATA | O | Sub-code data output pin. |
| 10 | SFSY | O | Sub-code frame sync signal output pin. |
| 11 | SBSY | O | Sub-code sync output pin. |
| 12 | EMPA | O | Emphasis output pin. |
| 13 | LRCK | O | LR clock output pin. |
| 14 | BCK | O | Bit clock output pin. |
| 15 | AOUT | O | Audio data output pin. |
| 16 | DOUT | O | Digital out output pin. |
| 17 | 56MK | O | 6.5MHz clock output pin. |
| 18 | CSIN | I | Digital out C bit data input pin. |
| 19~21 | AD0~AD2 | O | External RAM address signal output pins. |
| 24~30 | AD3~AD9 | O | |
| 33 | AD10 | O | |
| 22 | VSS | – | Ground pin. |
| 23 | VDD | – | Power supply voltage pin. |
| 31 | R/W | O | External RAM read/write signal output pin. |
| 32 | $\overline{CE}$ | O | External RAM chip enable signal output pin. |
| 34~41 | MDB7~MDB0 | I/O | External RAM data bus line. |
| 42 | X'PD | O | |
| 43 | XI | I | X'tal oscillator connection pins. X'tal oscillator is connected to generate necessary |
| 44 | XO | O | clock signals. X'tal=16.9344MHz |
| 45 | $\overline{CCE}$ | I | Command or data send/receive chip enable pin. |
| 46 | BUCK | I | Command or data send/receive clock input pin. |
| 47~50 | BUS0~BUS3 | I/O | Command or data send/receive bus line. |
| 51 | 4MCK | O | 4MHz clock output pin. |
| 52 | $\overline{RST}$ | I | Reset input pin. |
| 53 | VDD | – | Power supply voltage pin. |
| 54 | VSS | – | Ground pin. |
| 55 | MCK | O | Master clock output pin. |
| 56 | PSD | O | Processor serial data output pin. |
| 57 | SSD | I | Servo serial data input pin. |
| 58 | PREB | O | Preamble output pin (7.35kHz/32). |
| 59 | $\overline{TEST}$ | I | Test pin. Normally "H" or open for use. |
| 60 | EFMI | I | EFM signal input pin. |

# DP-M6010

## CIRCUIT DESCRIPTION

### 5. Microprocessor µPD75216ACW-239 (MAIN PC UNIT : Q310)

#### 5-1. Terminal connection diagram

Top pins (64 to 33):

| Pin | Signal |
|-----|--------|
| 64 | VDD |
| 63 | S4 ( e ) |
| 62 | S5 ( f ) |
| 61 | S6 ( g ) |
| 60 | S7 ( h ) |
| 59 | S8 ( i ) |
| 58 | S9 ( j ) |
| 57 | V PRE |
| 56 | V LOAD |
| 55 | S1O ( K ) |
| 54 | S11 ( l ) |
| 53 | EXCK |
| 52 | EJECT |
| 51 | +/- |
| 50 | FDMVT |
| 49 | 1OG |
| 48 | 9G |
| 47 | 8G |
| 46 | 7G |
| 45 | 6G |
| 44 | 5G |
| 43 | 4G |
| 42 | 3G |
| 41 | 2G |
| 40 | 1G |
| 39 | RESET |
| 38 | K3 |
| 37 | K2 |
| 36 | K1 |
| 35 | K0 |
| 34 | NC |
| 33 | Vss |

Bottom pins (1 to 32):

| Pin | Signal |
|-----|--------|
| 1 | S3 ( d ) |
| 2 | S2 ( c ) |
| 3 | S1 ( b ) |
| 4 | S0 ( a ) |
| 5 | TAC |
| 6 | TRAY |
| 7 | CLMP |
| 8 | MG IN |
| 9 | REM |
| 10 | SLT |
| 11 | NC |
| 12 | NC |
| 13 | AB |
| 14 | CK |
| 15 | R/W |
| 16 | CE |
| 17 | ADO0 |
| 18 | ADO1 |
| 19 | DATA |
| 20 | BUSY |
| 21 | DM |
| 22 | DIZ |
| 23 | CCE |
| 24 | BUCK |
| 25 | BUS0 |
| 26 | BUS1 |
| 27 | BUS2 |
| 28 | BUS3 |
| 29 | MUTE |
| 30 | X1 (4MCK) |
| 31 | NC |
| 32 | Vss |

Center label: µPD75216ACW - 239

#### 5-2. Block diagram

# CIRCUIT DESCRIPTION

## 5-3. Explanation of terminals

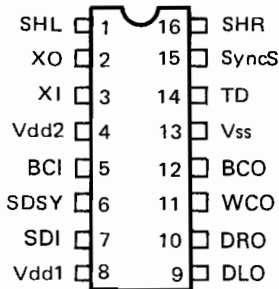| Pin No. | Pin name | Signal name | I/O | Function |
|---------|----------|-------------|-----|----------|
| 1 ~ 4 | S3 ~ S0 | Pd ~ Pa | O | FIP segment output (segment d ~ a) and key scan output. |
| 5 | P00 | TAC | I | TAC sensor signal input. With TAC : "H", Without TAC : "L". |
| 6 | P01 | TRAY | I | Tray return switch input. Tray out : "H", Tray in : "L". |
| 7 | P02 | CLMP | I | Clamp switch input. Not clamped : "H", Clamped : "L". |
| 8 | P03 | MGIN | I | Magazine in switch input. Magazine out : "H", Magazine in : "L". |
| 9 | P10 | REM | I | Remote control signal input. |
| 10 | P11 | SLT | I | Start limit switch input. OFF : "H", ON : "L". |
| 11,12 | P12, P13 | – | I | Unused port (connected to VDD). |
| 13 | P20 | AB | O | External RAM address output. |
| 14 | P21 | CK | O | External RAM address control clock output. |
| 15 | P22 | R/W | O | External RAM read/write signal output. |
| 16 | P23 | $\overline{CE}$ | O | External RAM chip enable signal output. |
| 17, 18 | P30, P31 | ADO0, ADO1 | O | External RAM address output. |
| 19 | P32 | DATA | I/O | System control DATA I/O. |
| 20 | P33 | BUSY | I/O | System control BUSY I/O. |
| 21 | P60 | DM | O | Disc motor selection signal. "H" : Disc motor ON, "L" : Lift motor ON. |
| 22 | P61 | DIZ | O | Tracking coil dither signal output. |
| 23 | P62 | $\overline{CCE}$ | O | CD bus chip enable signal output. |
| 24 | P63 | BUCK | O | CD bus clock output. |
| 25 | P40 | BUS0 | I/O | CD bus data bit 0. |
| 26 | P41 | BUS1 | I/O | CD bus data bit 1. |
| 27 | P42 | BUS2 | I/O | CD bus data bit 2. |
| 28 | P43 | BUS3 | I/O | CD bus data bit 3. |
| 29 | PPO | MUTE | O | Mute signal output. "H" : Mute ON, "L" : Mute OFF. |
| 30 | X1 | 4MCK | I | CLock input (4MHz). |
| 31 | X2 | – | – | NC. |
| 32 | Vss | Vss | | GND voltage pin. |
| 33 | XT1 | – | – | (Connected to GND.) |
| 34 | XT2 | – | – | NC. |
| 35 ~ 38 | P50 ~ P53 | K0 ~ K3 | I | Key sense input. |
| 39 | $\overline{RESET}$ | $\overline{RESET}$ | I | System reset input. |
| 40 ~ 49 | T0 ~ T9 | 1G ~ 10G | O | FIP grid output pin. |
| 41 | T1 | 2G | O | FIP grid output pin. |
| 50 | T10 | FDMUT | O | Feed motor mute signal output. "H" : Feed motor OFF, "L" : Normal operation. |
| 51 | T11 | +/– | O | Mechanism up/down selection signal. "H" : Down, "L" : Up. |
| 52 | T12 | EJECT | O | Eject solenoid ON/OFF signal. "H" : ON, "L" : OFF. |
| 53 | T13 | EXCK | O | CD bus control clock output (clamp motor control). |
| 54, 55 | T14, T15 | Pl, Pk | O | FIP segment output (segment l, k). |
| 56 | VLOAD | VLOAD | – | FIP controller/driver pull-down resistor connection pin (connected to –28V). |
| 57 | VPRE | VPRE | – | FIP controller/driver output buffer power supply pin (connected to GND). |
| 58 ~ 63 | S9 ~ S4 | Pj ~ Pe | O | FIP segment output (segment j ~ e) and key scan output. |
| 64 | VDD | VDD | – | Positive power supply pin (connected to +5V). |

# CIRCUIT DESCRIPTION

## 6. Digital filter YM3414
## (MAIN PC UNIT : Q503)

**Introduction:**

The YM3414 (ACDDF) is an ultra-high performance, octuple oversampling digital filter for digital audio.

The YM3414 is directly connectable to digital audio LSI, DIT, DIR, etc., so that excellent filtering property can be easily realized.

### 6-1. Terminal connection diagram

```
        SHL  ⊏ 1    16 ⊐  SHR
         XO  ⊏ 2    15 ⊐  SyncS
         XI  ⊏ 3    14 ⊐  TD
        Vdd2 ⊏ 4    13 ⊐  Vss
         BCI ⊏ 5    12 ⊐  BCO
        SDSY ⊏ 6    11 ⊐  WCO
         SDI ⊏ 7    10 ⊐  DRO
        Vdd1 ⊏ 8     9 ⊐  DLO
```

**Features:**

- 2-channel octuple oversampling
- Linear phase FIR filters cascade-connected in 3 stages
  First filter: 225-order FIR filter
  Second filter: 41-order FIR filter
  Third filter: 21-order FIR filter
- Built-in 19x18-bit multiplier
- Coefficient 18-bit floating point multiplication and addition
- Built-in overflow limiter
- Filtering characteristics
  Pass band ripple: 0 to 20 kHz: within +/-0.001 dB
  (within 16-bit quantization error)
- High precision oscillation exclusive for filter
- CMOS process
- Single power 5 V
- 16-pin DIP package

### 6-2. Block diagram
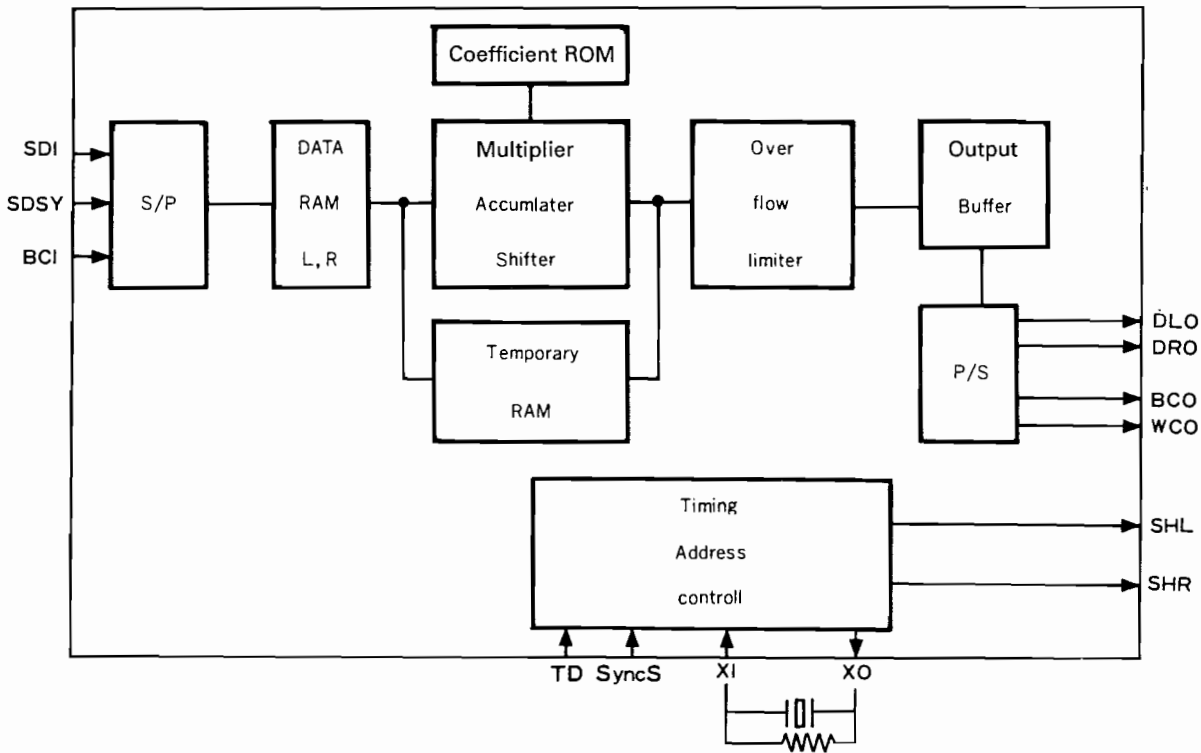
# CIRCUIT DESCRIPTION

**Function Outline:**

A variety of performance is obtained through 3-stage cascade connection of linear phase FIR filters for 2-channel octuple oversampling digital filtering: a 225-order FIR filter at the first stage, a 41-order FIR filter at the second stage and a 21-order FIR filter at the final stage.

The built-in multiplier has a 19x18-bit overflow limiter inside. 18-bit floating-point multiplication/addition is performed for coefficient and word length.

As to the calculational filtering property, the pass band (0 to 20 kHz) ripple is within +/-0.001 dB less than 16-bit quantization error, and the reject band (more than 24.1 kHz) is damped down to less than -100 dB.

The input is of 16-bit 2-channel, MSB first, 2's complement.

The output is feasible in either the 1-DAC or 2 DAC signal format due to the TD "H"/"L" selection. In this case, however, the 1-DAC signal format is for quadruple over-

sampling and the 2-DAC signal format is for octuple oversampling.

The extended portion of the internal multiplication data is output as two bits (-2, -1) lower than LSB. This is not necessary in the 16-bit mode. In this case, care is taken so that the rounding error is minimized at which-ever point it is discarded.

Filtering characteristics (theoretical values),
fs=44.1kHz
Pass band: 0 to 20 kHz
Reject band: 24.1 kHz to 328.7 kHz
                        (octuple oversampling)
24.1 kHz to 152.3 kHz (quadruple)oversampling)
Pass band ripple: within 0.001 dB
Reject band damping: less than -100 dB
Quadruple oversampling: -0.00013 dB
                                : 20 kHz -1dB24.1 kHz
Octuple oversampling: -0.00016 dB: 20 kHz
                                -104 dB: 24.1 kHz

## 6-3. Explanation of terminals

| Pin No. | Pin Name | I/O | Function |
|---------|----------|-----|----------|
| 1 | SHL | O | With one DAC (TD="L") : L-ch deglitcher signal. (in quadruple oversampling) |
|   |   |   | With two DACs (TD="H") : L/R-ch deglitcher signal (in octuple oversampling) |
| 2 | XO | O | X'tal oscillation between pins XI and XO. |
| 3 | XI | I | Clock rate of 384fs. (Direct input to XI from outside is also possible.) |
| 4 | Vdd2 |   | +5V power supply pin for X'tal oscillation and deglitcher signal. |
| 5 | BCI | I | Input data bit clock input pin. |
| 6 | SDSY | I | Input data L/R-ch discrimination and input timing indication clock input pin. |
| 7 | SDI | I | Data input pin. |
| 8 | Vdd1 |   | +5V power supply pin for digital signal system. |
| 9 | DLO | O | With one DAC (TD="L") : L/R-ch data output pin. (in quadruple oversampling) |
|   |   |   | With two DACs (TD="H") : L-ch data output pin. (in octuple oversampling) |
| 10 | DRO | O | R-ch data output pin. |
| 11 | WCO | O | Output data DLO/DRO word clock output pin. |
| 12 | BCO | O | Output data bit clock output pin. |
| 13 | Vss |   | Ground pin. |
| 14 | TD | I | 1-DAC/2-DAC select input pin. (1-DAC (quadruple)="L", 2-DACs=(octuple)="H") |
| 15 | SyncS | I | Async input jitter absorption sync signal input pin. |
|   |   |   | (Syncs "H" : full sync input, Syncs "L" : SDSY inhibit) |
| 16 | SHR | O | 1-DAC R-ch deglitcher signal output pin. |

# DP-M6010

## CIRCUIT DESCRIPTION

### 6-4. Timing diagram
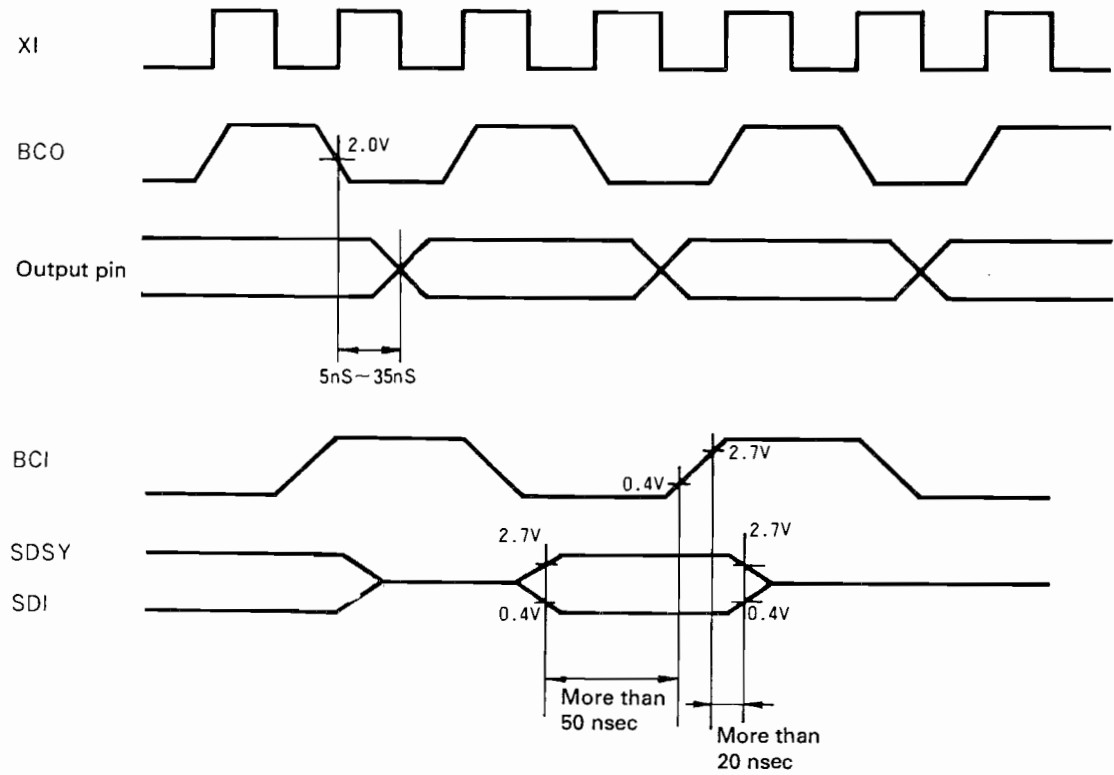


### 6-5. Input signal format
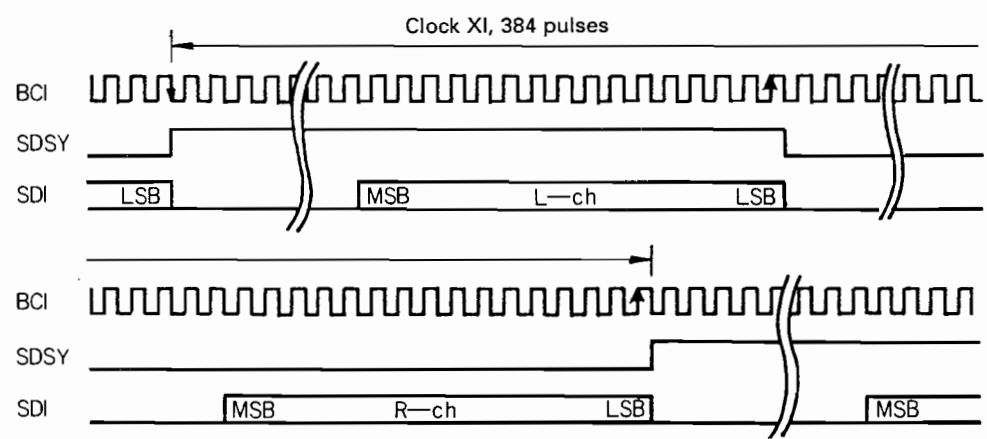


**Full sync input SyncS="H":**
If there are 384 pulses of clock XI between the leadingedeof SDSY and the next leading edge, any numbeofpulses of clock BCI is permitted. BCI, SDSY and SDI are in full sync with the XI clock. Thus, they are sent out on a clock obtained from dividing XI, where any relationship of phase with XI is not specified. SDSY and SDI are in sync at leading edge.
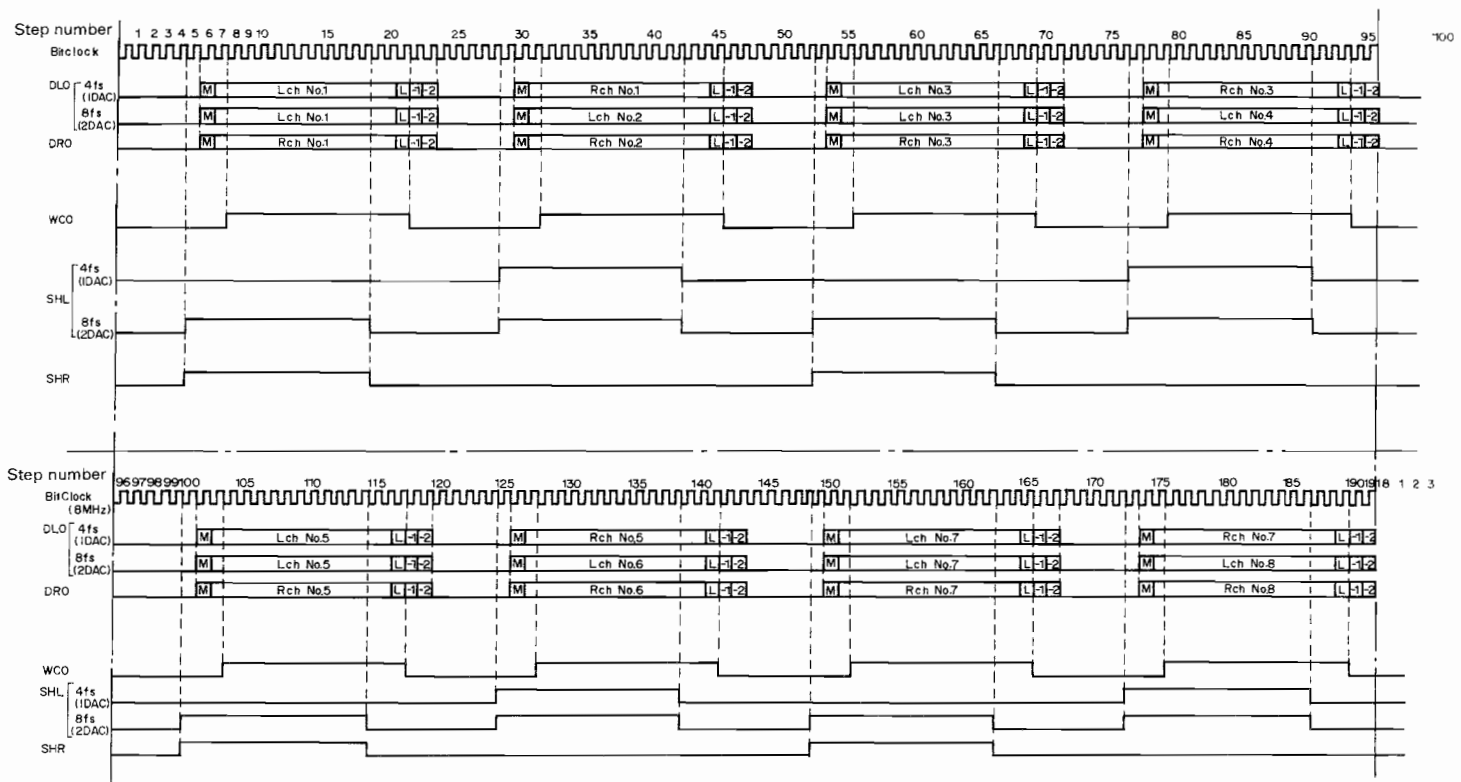
# CIRCUIT DESCRIPTION
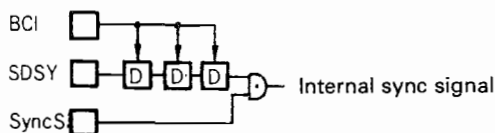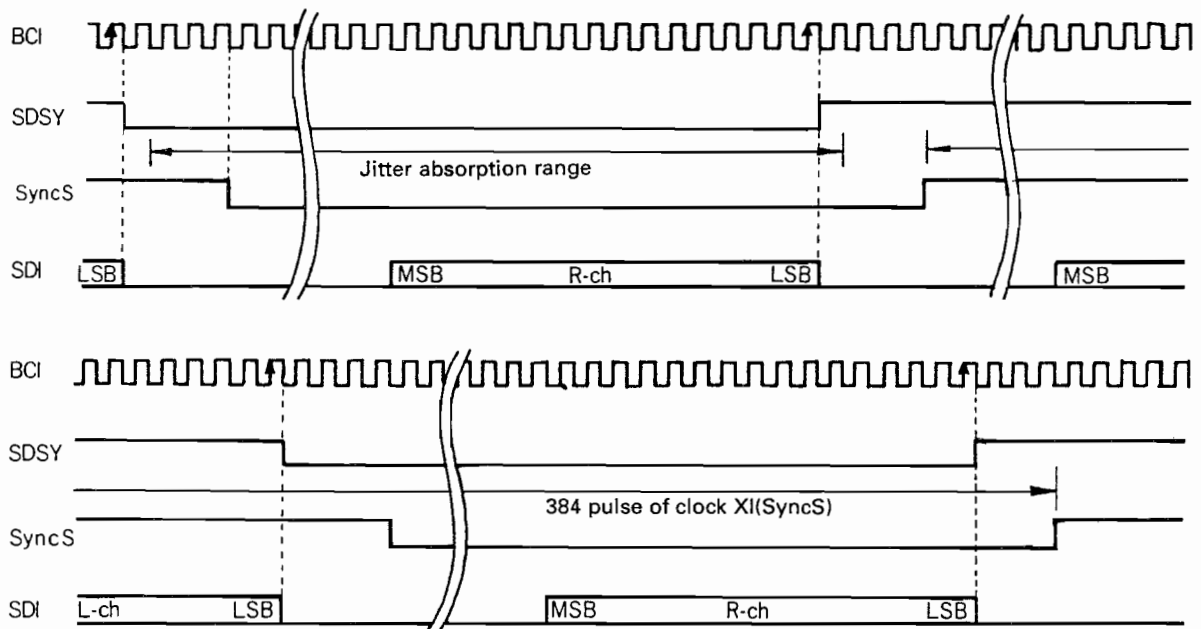


**Async input:**

SDSY is masked by SyncS. Namely, SDSY is delayed 3pulses of clock BCI and is ANDed with Syncs to become a internal calculation start signal. For this end, SyncS needs to be in full sync with clock XI. It can be thus permitted that SDSY, BCI or SDI contains jitter.

## 6-6. Output signal format

# DP-M6010
## ADJUSTMENT/REGLAGE/ABGLEICH

### Adjustment

| NO. | ITEM | INPUT SETTING | OUTPUT SETTING | PLAYER SETTING | ALIGNMENT POINT | ALIGN FORFIG | FIG |
|---|---|---|---|---|---|---|---|
| 1 | FOCUS ERROR BALANCE | TEST DISC | Connected an oscilloscope CH1 : RF (MAIN PCB) CH2 : TE (MAIN PCB) Connected an oscilloscope to RF for CH1 and for CH2. (MAIN PCB) | PLAY | FE BALANCE (RF PCB) | Optimum eye pattern | (a) |

### Reglages

| N° | ITEM | REGLAGE D' ENTREE | REGLAGE DE SORTIE | REGLAGE DE LA LECTURE | POINT D' ALIGNEMENT | ALIGNEMENT POUR | FIG |
|---|---|---|---|---|---|---|---|
| 1 | BALANCE D' ERREUR DE MISE AU POINT | DISQUE TEST TYPE 4 | Connector un oscilloscope comme suit. CH1 : RF (MAIN PCB) CH2 : TE (MAIN PCB) Connecter un oscilloscope á RF pour CH1 et TE pour CH2. (MAIN PCB) | PLAY | FE BALANCE R103 (RF PCB) | Form optimum | (a) |

### Abgleich

| NR. | GEGENSTAND | EINGANGS-EINSTELLUN | AUSGANGS-EINSTELLUNGE | SPIELER-EINSTELLUNG | ABGLEICH-PUNKT | ABGLEICHUNG | ABB. |
|---|---|---|---|---|---|---|---|
| 1 | FOKUS-FEHLERAUSGLEICH | TEST DISC TYP 4 | Ein Oazilloskop wie folgt anschließen. Kanal1 : RF (Haupt-Platine) Kanal2 : TE (Haupt-Platine) Ein Oszilloskop an RF für Kanal1 und TE für Kanal2 anschließen. (Haupt-Platine) | PLAY | FOKUS-FEHLERAUSGLEICH R103 (RF PCB) | Optimales Augenmuster | (a) |

22
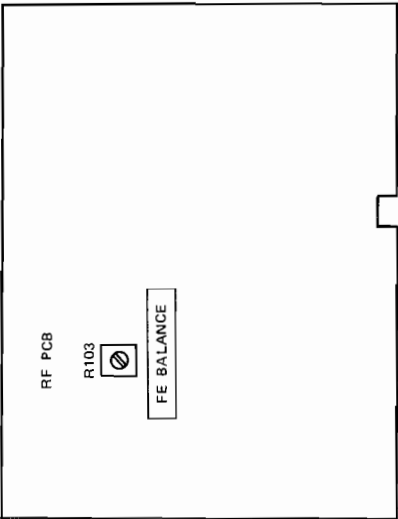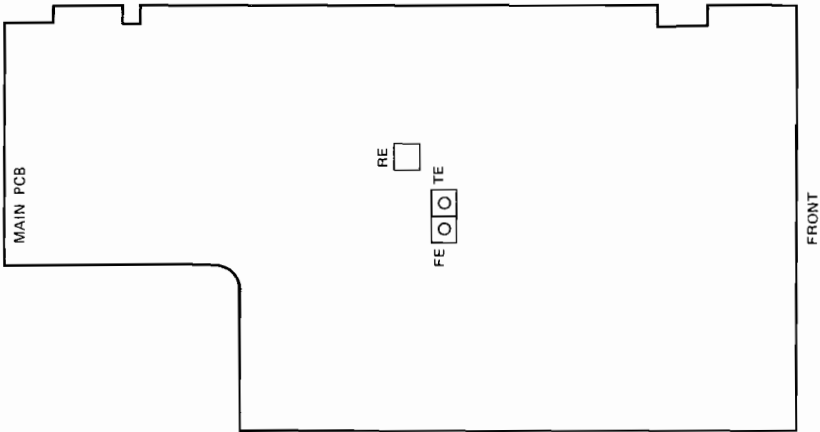
## ADJUSTMENT/REGLAGE/ABGLEICH
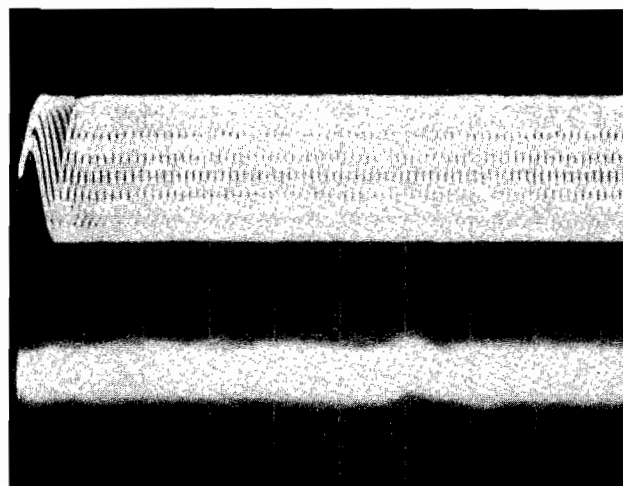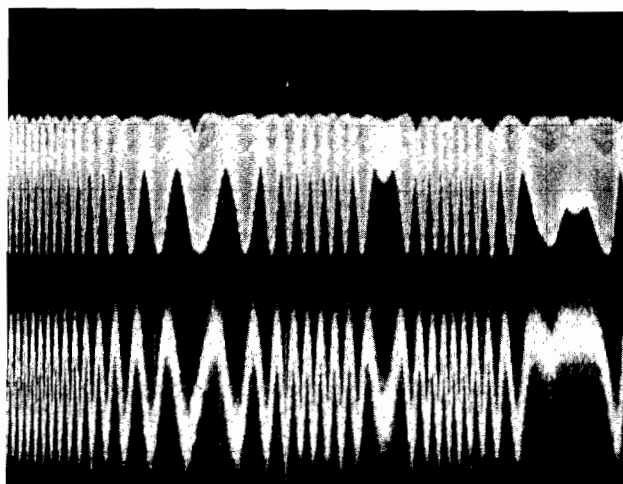
CH1 RF
1.0V/div

CH2 E.Spot
0.1V/div
AC coupling for
CH2 only
Couplage CA pour canal 2 seulement
AC-Kopplung nur für Kanal 2

(2μsec/div) ⌐ Projection
              ├ Projection
              └ Hervorstehung

(Photo. 4)
(Photo. 4)
(Foto. 4)

- RF signal and E.Spot signal in test mode (PLAY).
- If the diffraction grating has been adjusted properly, the influence of triggering is observed on the E.Spot waveform of approx. 12μs after RF signal, in the form of a projection.
- Signal RF et signal E.Spot en mode de test (PLAY).
- Si le réseau de diffraction a été ajusté correctement, l'influence du déclenchement s'observe sur la forme d'onde E.Spot d'environ 12μs après le signal RF, sous la forme d'une projection.
- RF-Signal und E.Spot-Signal im Testmodus (PLAY).
- Wenn das Diffraktionsgitter richtig eingestellt wurde, wird der Einfluß des Triggers in der E.Spot-Wellenform etwa 12μs nach dem RF-Signal in der Form einer Hervorstehung beobachtet.

CH1 RF
1.0V/div

◄—0(V)

CH2 T.Error
2.0V/div

◄—0(V)

(20msec/div)

(Photo. 5)
(Photo. 5)
(Foto. 5)

- RF signal and T.Error signal; in test mode (Focusing ON). (Disc type 4)
- Adjust T.Error so that the waveform is symmetrical above and below 0V.
- Signal RF et signal T.Error; en mode test (mise au point ON). (Disque de type 4)
- Ajuster T.Error pour que la forme d'onde soit symétrique en-dessus et au-dessous de 0V.
- RF-Signal und T.Error-Signal; im Testmodus (Fokussierung eingeschaltet). (Disc-Typ 4)
- T.Error so einstellen, daß die Wellenform über und unter 0V symmetrisch ist.
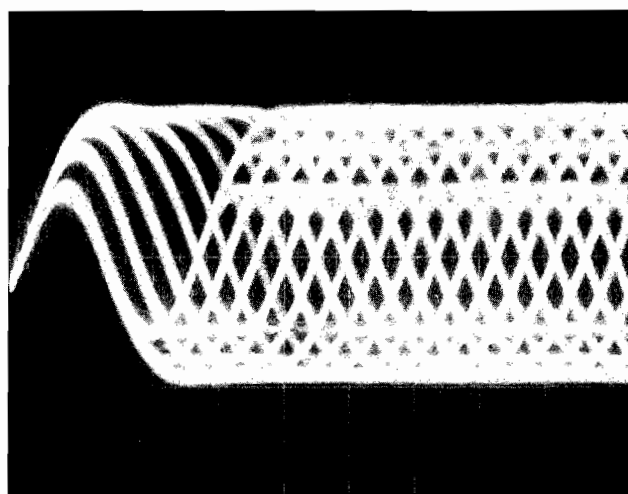
RF signal
0.5V/div

(0.5μsec/div)

(Photo. 6)
(Photo. 6)
(Foto. 6)

- RF signal in test mode (PLAY).
- Perform the tangential and focusing offset adjustments so that each of the center cross points are focused into one point on the display. The crossing points above and below the center shall also be displayed clearly.
- Signal RF en mode de test (PLAY).
- Effectuer les ajustements d'offset tangentiel et de mise au point pour que chacun des points de croisement central soit mis au point sur un point de l'affichage. Les points de croisement au-dessus et en-dessous du centre doivent aussi être affichés clairement.
- RF-Signal im Testmodus (PLAY).
- Die Tangential- und Fokusversatz-Einstellungen so durchführen, daß jeder der mittleren Kreuzungspunkte in einem Punkt auf dem Display fokussiert wird. Auch die Kreuzungspunkte über und unter der Mitte müssen klar angezeigt werden.

# DP-M6010

## VOLTAGE TABLE

### RF-PC UNIT

**Q101**

| Pin | V | | Pin | V |
|---|---|---|---|---|
| 1, 2 | 2.0V | | 19, 20 | 0.9V |
| 3 | 0.9V | | 21 | 4.0V |
| 4~6 | 2.0V | | 22 | 1.0V |
| 10 | 4.4V | | 23 | 0V |
| 11, 12 | 0V | | 24 | 5.0V |
| 13~17 | 2.0V | | | |

| | B | E | C |
|---|---|---|---|
| Q102 | 4.4V | 4.9V | 1.6V |

### MAIN-PC UNIT

**Q202**

| Pin | V |
|---|---|
| 1~3 | 0V |
| 4 | 5.0V |
| 5~7 | 0V |
| 8 | -5.0V |

**Q301**

| Pin | V |
|---|---|
| 1 | 2.0V |
| 2 | 5.0V |
| 3 | 1.0V |
| 4, 5 | 2.0V |
| 15 | 0V |
| 17 | 2.6V |
| 18 | 2.5V |
| 19 | 1.3V |
| 20 | 4.3V |
| 21 | 2.6V |
| 22 | 0V |
| 23 | 5.0V |
| 24 | 5.0V |
| 26 | 2.6V |
| 29 | 3.6V |
| 31, 32 | 0V |
| 33 | 0.6V |
| 34 | 0V |
| 37 | 5.0V |
| 38 | 0V |
| 41 | 0V |
| 42, 43 | 5.0V |
| 44 | 2.0V |
| 46 | 2.0V |
| 48 | 0V |
| 50 | 2.0V |
| 53 | 5.0V |
| 54 | 0V |

**Q302**

| Pin | V |
|---|---|
| 1, 2 | 2.0V |
| 3 | 4.0V |
| 4 | 4.3V |
| 5 | 1.3V |
| 7 | 2.0V |
| 12 | 5.0V |
| 13 | 2.2V |
| 14 | 2.6V |
| 15 | 0V |
| 19~21 | 2.6V |
| 22 | 0V |
| 24~30 | 2.6V |
| 31, 32 | 2.4V |
| 33 | 2.8V |
| 34~37 | 2.7V |
| 38 | 5.0V |
| 39, 40 | 3.0V |
| 41 | 3.5V |
| 43 | 2.6V |
| 45 | 4.1V |
| 46 | 4.5V |
| 47 | 4.8V |
| 48, 49 | 4.4V |
| 50 | 4.1V |
| 51 | 2.6V |
| 52, 53 | 5.0V |
| 54 | 0V |
| 55 | 2.6V |
| 56 | 4.3V |
| 57 | 1.3V |
| 58 | 2.5V |
| 60 | 0V |

**Q303**

| Pin | V |
|---|---|
| 1 | 0V |
| 2 | 2.0V |
| 4, 5 | 0V |
| 6, 7 | 2.0V |
| 8 | 0V |
| 9 | 4.0V |
| 10 | 8.0V |
| 12, 13 | 0V |
| 15 | 8.0V |
| 16 | 4.0V |

**Q304**

| Pin | V |
|---|---|
| 1~3 | 5.0V |
| 5 | 0V |
| 6 | 5.0V |
| 7, 8 | 0V |

**Q305**

| Pin | V |
|---|---|
| 1 | 2.0V |
| 2 | 0V |
| 3 | -5.0V |
| 4 | 5.0V |
| 5, 6 | 0V |
| 7 | 5.0V |
| 8 | -5.0V |
| 9, 10 | 0V |
| 11, 12 | 2.0V |
| 13 | -5.0V |
| 14 | 5.0V |
| 15 | 0V |
| 17 | 5.0V |
| 18 | -5.0V |
| 19, 20 | 0V |

**Q306**

| Pin | V |
|---|---|
| 1~3 | 2.0V |
| 4~7 | 0V |
| 8 | 5.0V |

**Q307**

| Pin | V |
|---|---|
| 1~3 | 2.0V |
| 4 | 0V |
| 5~7 | 2.0V |
| 8 | 5.0V |

**Q308**

| Pin | V |
|---|---|
| 4 | -10.8V |
| 5 | 2.9V |
| 6 | 4.3V |
| 7 | 9.8V |
| 8 | 10.6V |

**Q309**

| Pin | V |
|---|---|
| 1~3 | 5.0V |
| 5 | 0V |
| 6 | 2.9V |
| 7, 8 | 0 |

**Q310**

| Pin | V |
|---|---|
| 1 | -10.0V |
| 2 | -5.2V |
| 3, 4 | -5.0V |
| 6 | 0V |
| 7, 8 | 5.0V |
| 9 | 4.9V |
| 10 | 0V |
| 11, 12 | 5.0V |
| 13 | 0V |
| 14~18 | 5.0V |
| 19, 20 | 0V |
| 21 | 5.0V |
| 22 | 0V |
| 23 | 4.0V |
| 24 | 4.5V |
| 25 | 4.8V |
| 26, 27 | 4.4V |
| 28 | 4.1V |
| 29 | 4.9V |
| 30 | 2.6V |
| 32, 33 | 0V |
| 35~38 | 0V |
| 39 | 5.0V |
| 40~48 | -21.0V |
| 49 | -21.1V |
| 50 | 5.0V |
| 51, 52 | 0V |
| 53 | 5.0V |
| 54 | -14.5V |
| 55 | 4.6V |
| 56 | -23.5V |
| 57 | 0V |
| 58 | -6.9V |
| 59 | -15.2V |
| 60 | -20.5V |
| 61 | -17.8V |
| 62 | -7.8V |
| 63 | -5.1V |
| 64 | 5.0V |

**Q311**

| Pin | V |
|---|---|
| 1 | 0V |
| 2 | 5.0V |
| 3~7 | 0V |
| 8 | 5.0V |
| 9 | 0V |
| 10 | 5.0V |
| 11 | 4.1V |
| 12, 13 | 4.4V |
| 14 | 4.8V |
| 15, 16 | 5.0V |
| 17 | 0V |
| 18 | 5.0V |

**Q312**

| Pin | V |
|---|---|
| 1~7 | 0V |
| 8, 9 | 5.0V |
| 10 | 0V |
| 11 | 5.0V |
| 12, 13 | 0V |
| 14 | 5.0V |

**Q313**

| Pin | V |
|---|---|
| 9~11 | 3.5V |
| 12 | 0V |
| 13 | 5.0V |
| 14~17 | 2.7V |
| 18 | 0V |
| 19 | 2.8V |
| 20, 21 | 2.4V |
| 24 | 5.0V |

**Q325**

| Pin | V |
|---|---|
| 1 | 5.0V |
| 2 | 0V |
| 3 | 5.0V |

**Q401**

| Pin | V |
|---|---|
| 1, 2 | 5.0V |
| 3 | 4.7V |
| 4 | 4.4V |
| 5 | 5.0V |
| 6 | 4.4V |
| 7, 8 | 0V |
| 9 | 5.0V |
| 11 | 4.0V |
| 13, 14 | 5.0V |
| 16 | 5.0V |

**Q403**

| Pin | V |
|---|---|
| 1 | 5.0V |
| 2 | 3.2V |
| 3 | 2.5V |
| 4 | 5.0V |
| 5 | 3.2V |
| 7 | 0V |
| 9 | 2.7V |
| 10 | 5.0V |
| 11 | 2.5V |
| 12 | 2.6V |
| 13, 14 | 5.0V |

**Q404**

| Pin | V |
|---|---|
| 1 | 5.0V |
| 3~5 | 2.5V |
| 6, 7 | 0V |
| 9 | 0V |
| 11 | 0V |
| 12, 13 | 2.5V |
| 14 | 5.0V |

**Q405**

| Pin | V |
|---|---|
| 1~4 | 5.0V |
| 7 | 0V |
| 8~10 | 5.0V |
| 11 | 2.5V |
| 12~14 | 5.0V |

**Q501**

| Pin | V |
|---|---|
| 1 | -5.0V |
| 2 | 0V |
| 3 | 5.0V |
| 5 | 2.7V |
| 6 | 3.2V |
| 7 | 0.2V |
| 8 | -5.0V |
| 9, 10 | 0V |
| 11~13 | 0V |
| 16 | 5.0V |

**Q502**

| Pin | V |
|---|---|
| 1 | -5.0V |
| 2 | 0V |
| 3 | 5.0V |
| 5 | 2.7V |
| 6 | 3.2V |
| 7 | 0.2V |
| 8 | -5.0V |
| 9~13 | 0V |
| 16 | 5.0V |

**Q503**

| Pin | V |
|---|---|
| 3 | 2.6V |
| 4 | 5.0V |
| 5, 6 | 2.6V |

**Q503**

| Pin | V |
|---|---|
| 7 | 0V |
| 8 | 5.0V |
| 9, 10 | 0.2V |
| 11 | 3.2V |
| 12 | 2.6V |
| 13 | 0V |
| 14, 15 | 5.0V |

**Q504**

| Pin | V |
|---|---|
| 1~3 | 0V |
| 4 | -5.0V |
| 5~7 | 0V |
| 8 | 5.0V |

**Q505**

| Pin | V |
|---|---|
| 1~3 | 0V |
| 4 | -5.0V |
| 5~7 | 0V |
| 8 | 5.0V |

**Q506**

| Pin | V |
|---|---|
| 1~3 | 0V |
| 4 | -5.0V |
| 5~7 | 0V |
| 8 | 5.0V |

**Q901**

| Pin | V |
|---|---|
| 1 | 10.6V |
| 2 | 0V |
| 3 | 8.0V |

**Q902**

| Pin | V |
|---|---|
| 1 | 10.6V |
| 2 | 0V |
| 3 | 5.0V |

**Q903**

| Pin | V |
|---|---|
| 1 | 10.6V |
| 2 | 0V |
| 3 | 5.0V |

**Q904**

| Pin | V |
|---|---|
| 1 | 0V |
| 2 | -10.8V |
| 3 | -5.0V |

| | B | E | C |
|---|---|---|---|
| Q314 | 2.6V | 2.0V | 2.0V |
| Q315 | 0V | 0V | 2.0V |
| Q316 | 4.4V | 4.9V | 10.6V |
| Q317 | 0V | 0V | 4.5V |
| Q318 | 0.7V | 0V | 0V |
| Q319 | 0V | 0V | 1.6V |

| | B | E | C |
|---|---|---|---|
| Q320 | 1.6V | 2.0V | 2.0V |
| Q321 | 4.5V | 5.0V | 4.4V |
| Q322 | 3.8V | 4.4V | 4.4V |
| Q324 | 9.8V | 10.6V | 2.9V |
| Q402 | 0.4V | 0V | 2.6V |
| Q507 | -2.5V | 0V | 0V |

| | B | E | C |
|---|---|---|---|
| Q508 | -2.5V | 0V | 0-V |
| Q509 | 0.7V | 0V | 0V |
| Q510 | 0.7V | 0V | 0V |
| Q905 | 0V | 1.9V | 0V |
| Q906 | 1.2V | 0V | 0V |
| Q907 | 0.7V | 0V | 0V |
| Q908 | 0V | 0V | 1.9V |

# PC BOARD (COMPONENT SIDE VIEW)

Refer to the schematic diagram for the values of resistors and capacitors.

(a) Focus error balance
: Optimum eye pattern

Oscilloscope

CH2:TE  CH1:RF

DP-M6010

22199771
PC-RF
ΔTK-T134
94V-0

SYSTEM CONTROL

OUTPUT

LASER PICK UP

RED    WHT

DOWN LIMIT SW    BRN    OPEN LIMIT SW    RED    DOK    YEL    RED
S103             YEL    S104             GRY    S102   BRN    S109
                                                                    TRAY RETURN SW

START LIMIT SW
WHT    S106
WHT

CLAMP SW
RED    S101

CLOSE LIMIT SW
BLU    YEL
S105
BLK
BLU

TAC SENSOR
RED    YEL    BLK

SOL.

MG-IN SW
WHT    BRN    BRN
BLK
BLU    S107

DISC & UP/DOWN MOTOR
M

MG-IN
ORG    S107

FEED MOTOR
RED    RED
BLK    YEL
WHT    ORG
       BLK

CLAMP MOTOR
M    BRN    J9
     YEL
     WHT
     BLK

P1 TRAY MOTOR
M    BLK    J10
     WHT
     RED
     GRY
     YEL
     BLU

J7   GRY
     ORG

J8   RED
     YEL
     BLK

J12  BLK
     ORG
     YEL
     RED
     WHT

J11  BLU
     ORG
     WHT
     BLK
     YEL
     BRN
     GRY
     RED

P.T.

ORG
ORG
BLK
RED
RED
GRY

YEL

22199785

25    26

# PC BOARD (FOIL SIDE VIEW)

DP-M6010

Refer to the schematic diagram for the values of resistors and capacitors.

Oscilloscope
CH1:RF
CH2:TE

(a) Focus error balance
: Optimum eye pattern

22199771   PC-RF   TK-T134△   94V-0

SYSTEM CONTROL

OUTPUT

LASER PICK UP
WHT   RED

22199785

P.T.

J7   GRY / ORG

J8   RED / YEL / BLK

J9   BRN / YEL / WHT / BLK   CLAMP MOTOR   M

J10   BLK / WHT / RED / GRY / YEL / BLU   P1 TRAY MOTOR   M

J11   BLU / ORG / WHT / BLK / YEL / BRN / GRY / RED

J12   BLK / ORG / YEL / RED / WHT

TRAY RETURN SW
S109

DOK
S102

OPEN LIMIT SW
S104

DOWN LIMIT SW
S103

MG·IN
S107

DISC & UP/ DOWN MOTOR   M

TAC SENSOR

START LIMIT SW
S106   WHT / WHT

FEED MOTOR   BLK   RED

MG·IN SW
S107   WHT / BLK / BLU

SOL.   BRN / BRN

CLOSE LIMIT SW
S105   YEL / BLU

CLAMP SW
S101   RED

ORG
ORG
BLK
RED
GRY

YEL

Component package reference:

2SA950Y 2SC2120
2SC1923 2SC2878
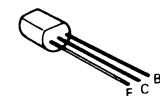
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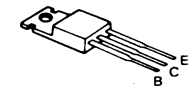
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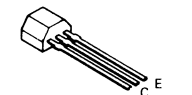
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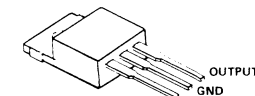
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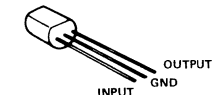
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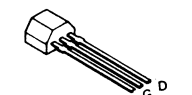
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NJM3404AD
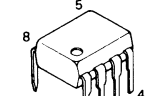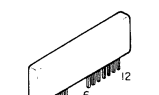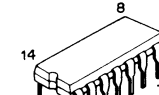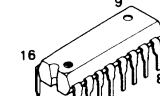
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TA7354P
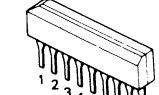
GP1U501X
TA8212F
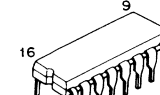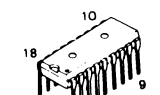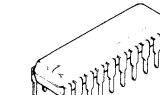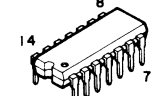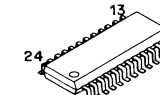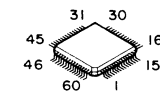
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TC74HC164AP
TC74HC74AP

PCM56P

TA8102P
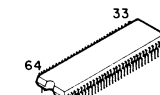TC74HC174AP

YM3414

UM6114

LC3514

TC4085BP

CXK5816M
TA8137F

TC9220F
TC9221F

μPD75216ACW-239

MC7905CT

MC7805CT

MAIN PC
(POWER PC)
9875-I

9219977I
RF PC

92199786
MAIN PC
(HP PC)

92199786
MAIN PC
(DISPLAY)

92199785
MAIN PC

9875-2
MAIN PC
(DPAC PC)
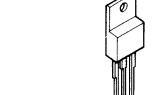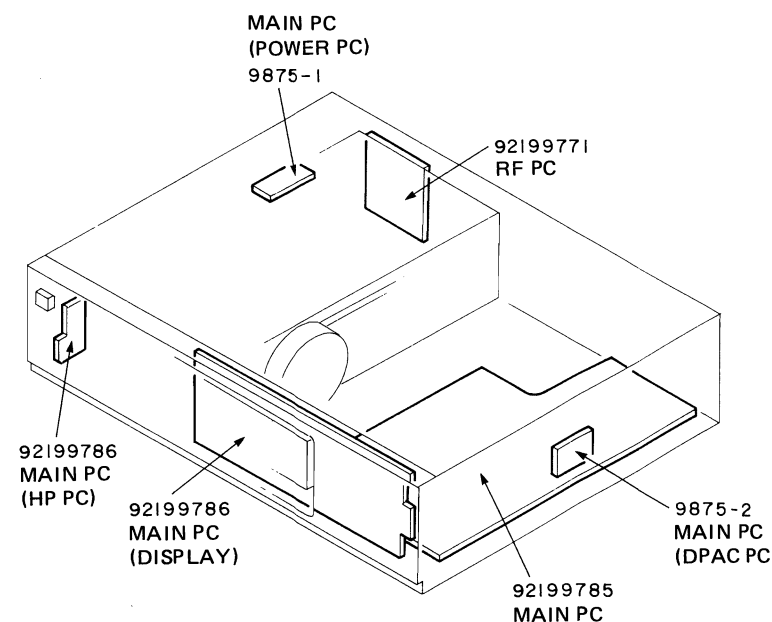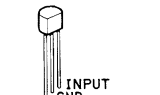
**CAUTION :** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.
- Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.
- Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Voltmeter gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u.U. geringfügig.
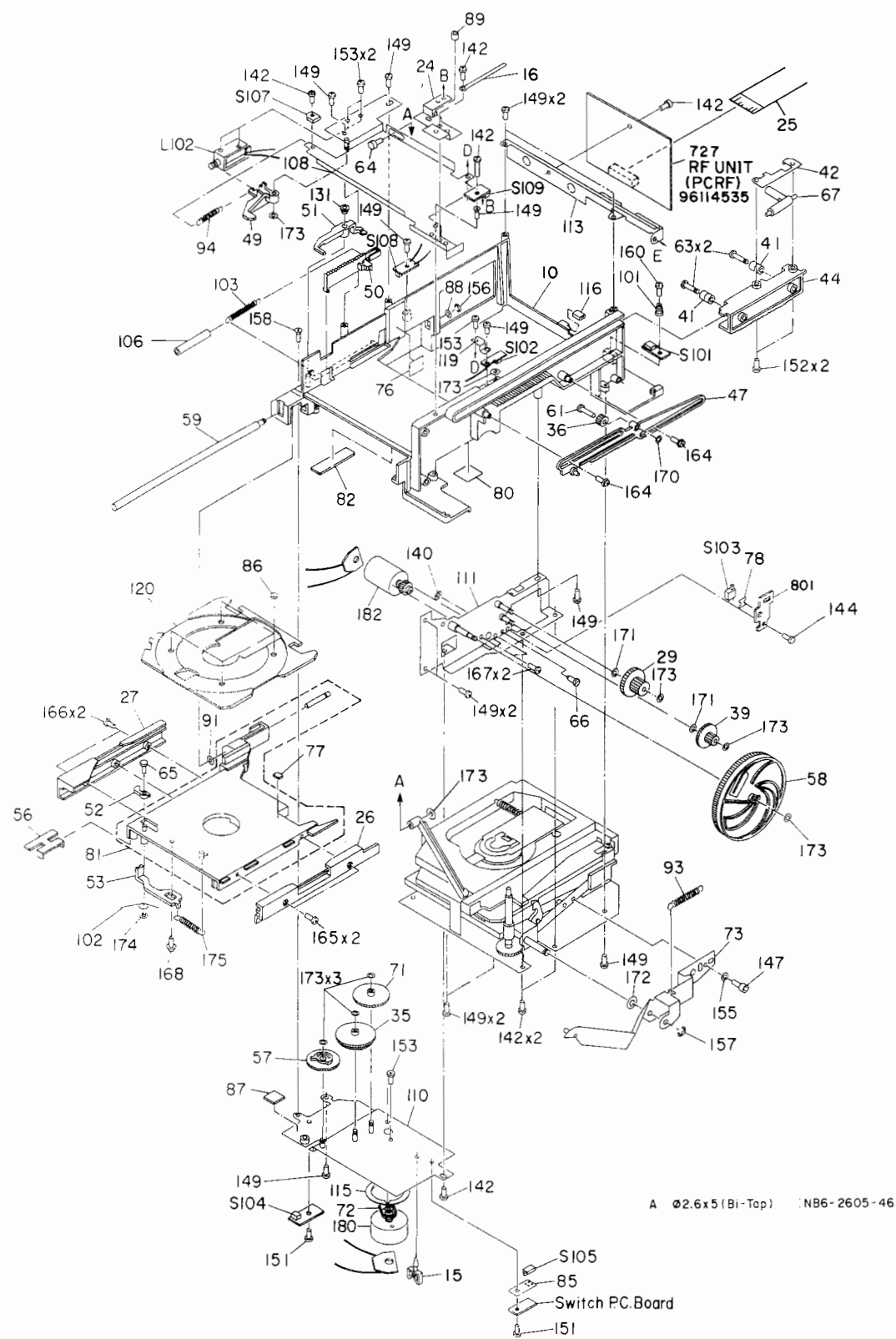
DP-M6010

KENWOOD

Y22-1750-10

## EXPLODED VIEW (MECHANISM)

## EXPLODED VIEW (MECHANISM)

A Ø2.6x5(Bi-Top)    :NB6-2605-46

727
RF UNIT
(PCRF)
96114535

Switch PC.Board

# DP-M6010    DP-M6010
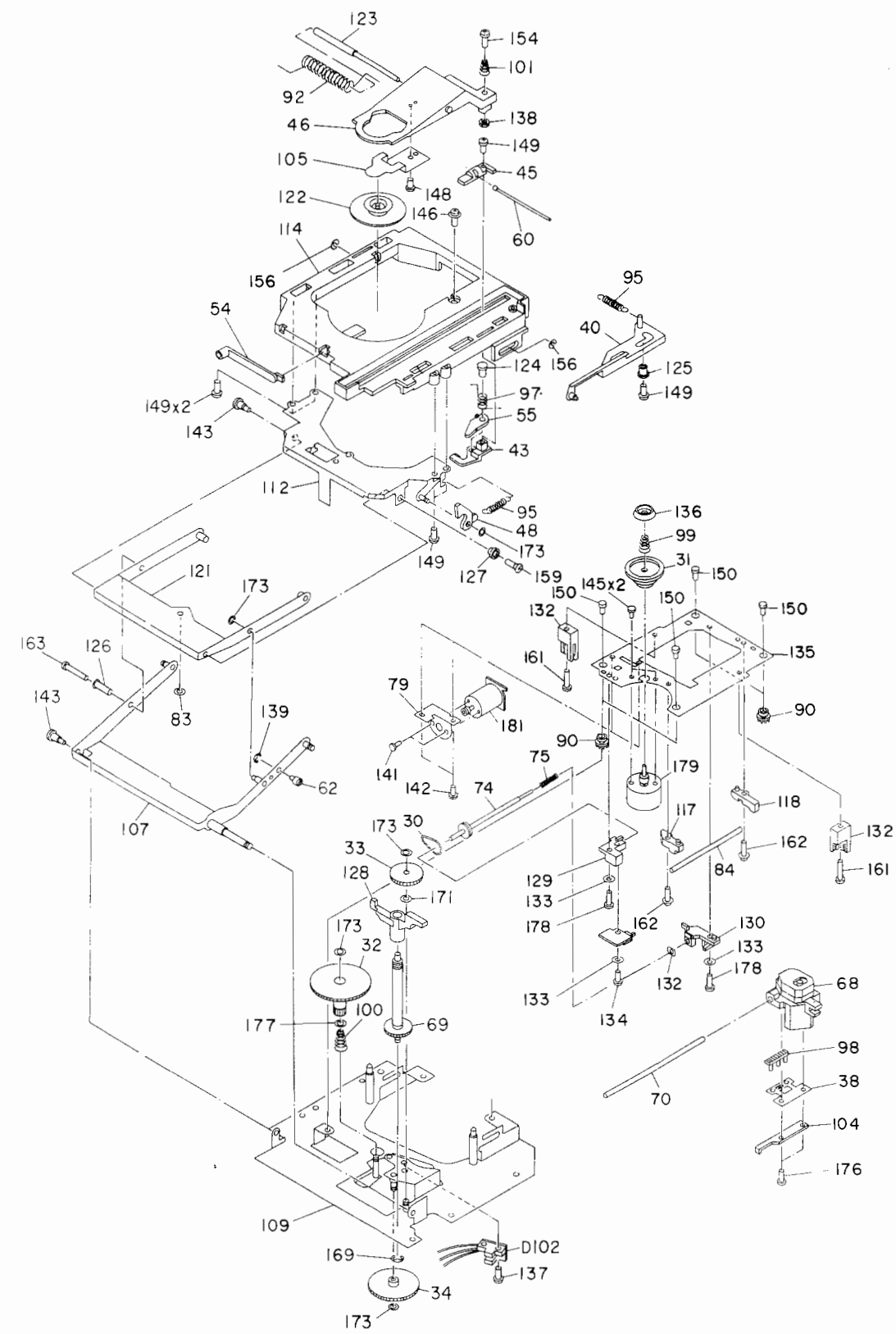
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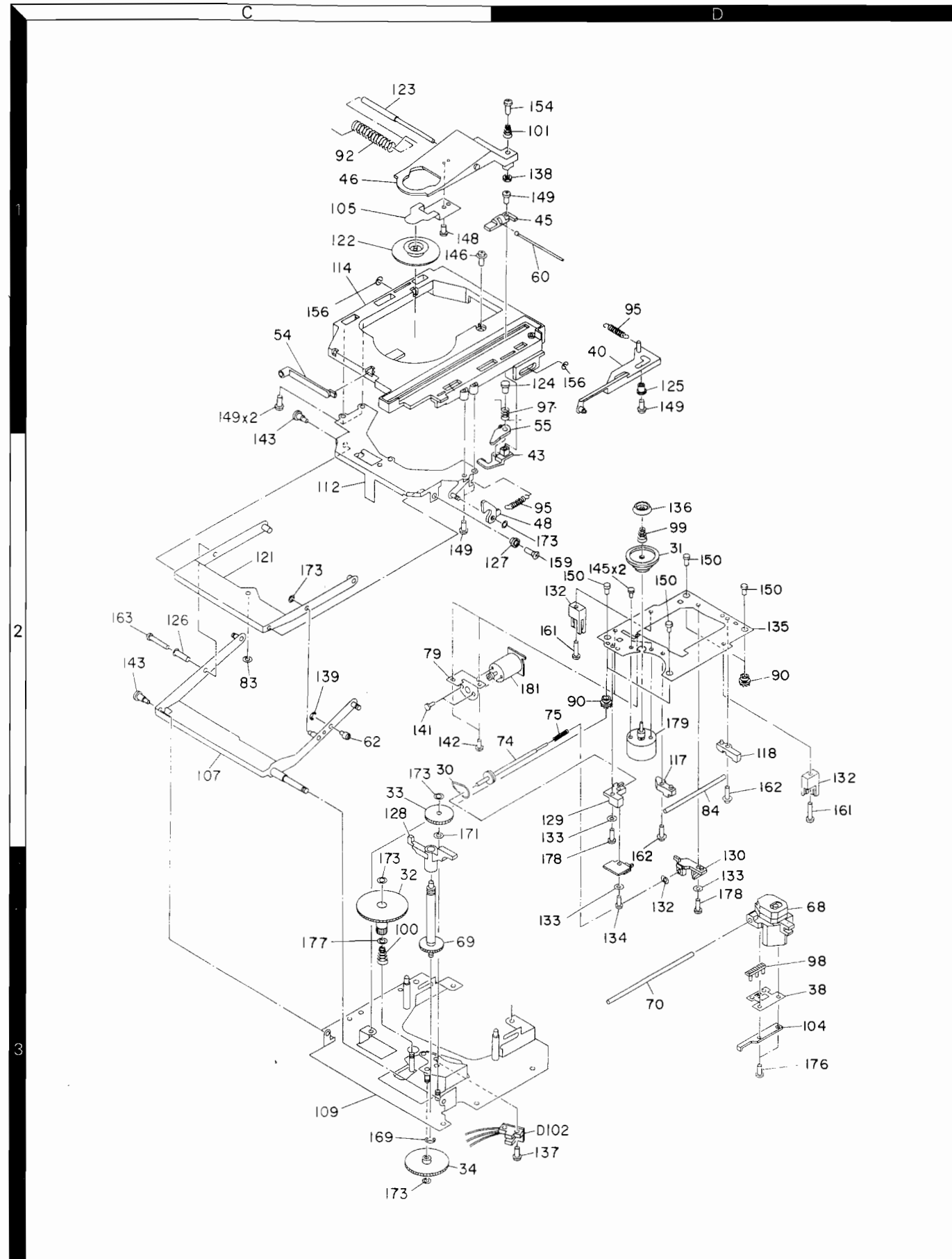


## EXPLODED VIEW (UNIT)

**Parts with the exploded numbers larger than 700 are not supplied.**

**Parts with the exploded numbers larger than 700 are not supplied.**

# PARTS LIST

✳ New Parts

Parts without Parts No. are not supplied.

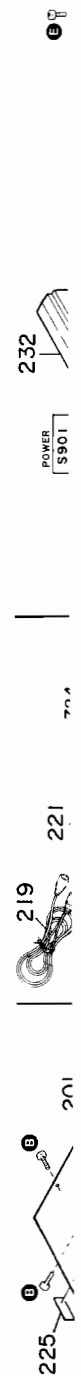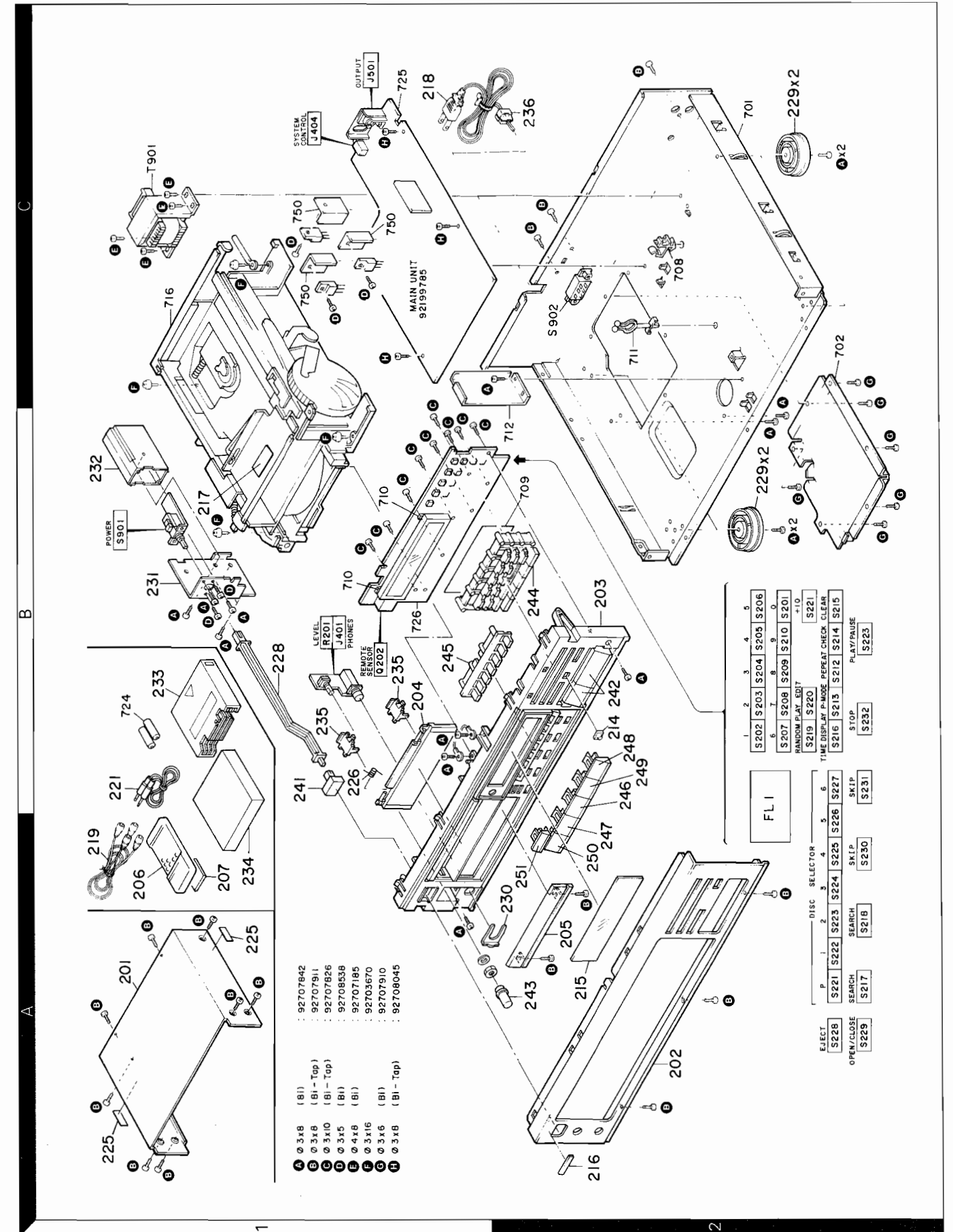Les articles non mentionnes dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

| Ref. No.<br>参照番号 | Address<br>位 置 | New<br>Parts<br>新 | Parts No.<br>部 品 番 号 | Description<br>部 品 名 / 規 格 | Desti-<br>nation<br>仕　　向 | Re-<br>marks<br>備考 |
|---|---|---|---|---|---|---|
| | | | | **DP-M6010** | | |
| 201 | 1E | ✳ | A01-1742-01 | METALLIC CABINET | | |
| 202 | 2E | ✳ | 90836875 | FRONT PANEL | | |
| 203 | 1E,1F | ✳ | 90017613 | SUB PANEL ASSY | | |
| 204 | 2E | ✳ | A29-0149-03 | PANEL (MAGAZINE COVER) | | |
| 205 | 2E | ✳ | 90848928 | TRAY PANEL ASSY | | |
| 206 | 1E | ✳ | A70-0291-08 | REMOTE CONTROLLER ASSY | | |
| 207 | 1F | ✳ | 22882258 | BATTERY CASE  (A70-0291-08) | | |
| 214 | 2F | | B12-0048-04 | INDICATOR | | |
| 215 | 2E | ✳ | 92837935 | FRONT GRASS | | |
| 216 | 1E | | B43-0287-04 | KENWOOD BADGE | | |
| 217 | 1F | | 92907153 | LABEL (LASER) | | |
| - | | | B46-0092-03 | WARRANTY CARD | K | |
| - | | | B46-0094-03 | WARRANTY CARD | UUE | |
| - | | | B46-0095-03 | WARRANTY CARD | UUE | |
| - | | | B46-0096-13 | WARRANTY CARD | X | |
| - | | | B46-0121-03 | WARRANTY CARD | P | |
| - | | ✳ | B50-9735-08 | INSTRUCTION MANUAL (ENGLISH) | | |
| - | | ✳ | B50-9736-08 | INSTRUCTION MANUAL (FRENCH) | PM | |
| - | | ✳ | B50-9737-08 | INSTRUCTION MANUAL (S,A,CH) | M | |
| - | | | B58-0223-04 | CAUTION CARD  (PRE-SET 120V) | U | |
| - | | | B58-0513-04 | CAUTION CARD  (PRESET220-240) | UE | |
| 218 | 1G | | 92176125 | AC POWER CORD | MUUE | |
| 218 | 1G | | 92176574 | AC POWER CORD | KP | |
| 218 | 1G | | 92176588 | AC POWER CORD | X | |
| 219 | 1E | ✳ | 92197084 | AUDIO CORD | | |
| 221 | 1E | | 92164990 | SYSTEM CONTROL CORD | | |
| 225 | 1E | ✳ | 92766061 | CUSHION(METSLLIC CABINET) | | |
| 226 | 2E | ✳ | 90703914 | SPRING (DOOR) | | |
| | | ✳ | H01-8556-08 | ITEM CARTON CASE | | |
| | | ✳ | 92938123 | POLYSTYRENE FOAMED FIXTURE(F) | | |
| | | ✳ | 92938124 | PORYSTYRENE FOAMED FIXTURE(R) | | |
| | | | 92941302 | PROTECTION BAG (AC CORD) | | |
| | | | 92941312 | PROTECTION BAG (INSTRUCTION) | | |
| | | ✳ | 92941378 | PROTECTION BAG | | |
| | | ✳ | 92941505 | PROTECTION BAG (MOGAZINE CASE) | | |
| | | ✳ | 92947082 | PROTECTION SEET | | |
| | | ✳ | 92947136 | PROTECTION SEET | | |
| | | ✳ | 92979128 | PAD | | |
| 228 | 1F | ✳ | 92755971 | POWER SWITCH LEVER | | |
| 229 | 2F,2G | | J02-1034-05 | FOOT | | |
| 230 | 2E | | J21-3326-05 | JACK MOUNTING HADWARE | | |
| 231 | 1F | ✳ | 92755922 | BRACKET-AC | | |
| 232 | 1F | ✳ | 92882668 | COVER-AC | | |
| 233 | 1F | ✳ | 12909001 | CD MAGAZINE | | |
| 234 | 1F | ✳ | 92721645 | MAGAZIN CASE | | |
| 235 | 1E | ✳ | 92882659 | MOUNTING HARDWARE (DOOR) | | |
| 236 | 1G | | 95844322 | POWER CORD BUSHING | | |
| 241 | 1F | | K27-1965-04 | KNOB (POWER) | | |
| 242 | 2F | | K29-3588-04 | KNOB (STOP,PLAY) | | |
| 243 | 1E | | K29-3632-04 | KNOB (HEADPHONE LEVEL) | | |
| 244 | 2E | ✳ | 90872779 | KNOB (10KEY) | | |
| 245 | 1F | ✳ | 90872780 | KNOB (DISK) | | |

E: Scandinavia & Europe   K: USA   P: Canada

U: PX(Far East, Hawaii)   T: England   M: Other Areas

UE : AAFES(Europe)   X: Australia

⚠ indicates safety critical components.

# DP-M6010

## PARTS LIST

× New Parts
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| Ref. No.<br>参照番号 | Address<br>位　置 | New<br>Parts<br>新 | Parts No.<br>部　品　番　号 | Description<br>部 品 名 ／ 規 格 | Desti-<br>nation<br>仕　　向 | Re-<br>marks<br>備考 |
|---|---|---|---|---|---|---|
| 246 | 2E | × | 90872781 | KNOB (SEARCH FOWARD) | | |
| 247 | 2F | × | 90872782 | KNOB (SEARCH REVERSE) | | |
| 248 | 2F | × | 90872783 | KNOB (SKIP FOWARD) | | |
| 249 | 2F | × | 90872784 | KNOB (SKIP REVERSE) | | |
| 250 | 2E | × | 90872785 | KNOB (OPEN/CLOSE) | | |
| 251 | 2E | × | 90872786 | KNOB (EJECT) | | |
| T901 | 1G | × | 92225679 | POWER TRANSFOMER | KP | |
| T901 | 1G | × | 92225680 | POWER TRANSFOMER | MUUE | |
| T901 | 1G | × | 92225681 | POWER TRANSFOMER | X | |
| A | 1F,1G | | 92707842 | SCREW (3X8) | | |
| B | 1E,2E | | 92707911 | SCREW (3X8) | | |
| C | 1F,2F | | 92707826 | SCREW (3X10) | | |
| D | 1F | × | 92708538 | SCREW (3X5) | | |
| E | 1G | | 92707185 | SCREW (4X8) | | |
| F | 1F,1G | × | 92703670 | SCREW (3X16) | | |
| G | 2F,2G | | 92707910 | SCREW (3X6) | | |
| H | 2F,2G | | 92708045 | SCREW (3X8) | | |
| S901 | | | 92196751 | PUSH SWITCH (POWER) | | |
| S902 | | × | 92190288 | SW-SLIDE-2C2P(POWER VOLT) | M | |
| **RF-PC UNIT** | | | | | | |
| C101 | | | CK45F1H103K | CERAMIC　　　0.010UF　K | | |
| C102 | | | CE04KW1A101M | ELECTRO　　　100UF　　10WV | | |
| C103 | | | CC45SL1H221J | CERAMIC　　　220PF　　J | | |
| C104 | | | CC45SL1H271J | CERAMIC　　　270PF　　J | | |
| C105 | | | CK14B1H221K | CERAMIC　　　220PF　　K | | |
| C106 | | | CK45F1H473K | CERAMIC　　　0.047UF　K | | |
| C107 | | | CE04KW1A101M | ELECTRO　　　100UF　　10WV | | |
| C108 | | × | CC45CH1H2R0D | CERAMIC　　　2.0PF　　D | | |
| C109 | | | CE04KW1A101M | ELECTRO　　　100UF　　10WV | | |
| C110 | | × | CK45F1H104K | CERAMIC　　　0.10UF　K | | |
| C111 | | | CE04KW1A101M | ELECTRO　　　100UF　　10WV | | |
| C112 | | | CK14D1H102M | CERAMIC　　　1000PF　M | | |
| C114 | | | CC45SL1H330J | CERAMIC　　　33PF　　J | | |
| C115 | | | CE04KW1A471M | ELECTRO　　　470UF　　10WV | | |
| C116 | | | CK14D1H102M | CERAMIC　　　1000PF　M | | |
| C117 | | | CK45F1H473K | CERAMIC　　　0.047UF　K | | |
| J15 | | × | 96721526 | SOCKET ASSY(8P) | | |
| J16 | | × | 96721527 | SOCKET ASSY(8P) | | |
| L101 | | | 92211343 | CHOCK COIL　　100UH | | |
| R103 | | × | 92658859 | SEMI FIXED　　200K | | |
| D101 | | | TLP907JA | OPTO ISOLATOR | | |
| D102 | | | TLP1006 | OPTO ISOLATOR | | |
| Q101 | | × | TA8137F | IC(RF AMP) | | |
| Q102 | | | 2SA950Y | TRANSISTOR | | |
| **MAIN-PC UNIT** | | | | | | |
| C201,202 | | × | CC45F1H223Z | CERAMIC　　　0.022UF　J | | |
| C203,204 | | | CK45FB1H223K | CERAMIC　　　0.022UF　K | | |
| C281 | | | CE04CW1HR10M | ELECTRO　　　0.10UF　50WV | | |
| C282 | | | CE04CW1A101M | ELECTRO　　　100UF　　10WV | | |
| C301 | | | CK45FB1H104K | CERAMIC　　　0.10UF　K | | |

E: Scandinavia & Europe　K: USA　　　P: Canada
U: PX(Far East, Hawaii)　T: England　　M: Other Areas
UE : AAFES(Europe)　　X: Australia .

⚠ indicates safety critical components.

## PARTS LIST

※ New Parts
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Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

| Ref. No.<br>参 照 番 号 | Address<br>位 置 | New<br>Parts<br>新 | Parts No.<br>部 品 番 号 | Description<br>部 品 名 ／ 規 格 | | | Desti-<br>nation<br>仕 向 | Re-<br>marks<br>備考 |
|---|---|---|---|---|---|---|---|---|
| C303 | | | CK45FB1H104K | CERAMIC | 0.10UF | K | | |
| C305 | | ∗ | CE04CB1H3R3M | ELECTRO | 3.3UF | 50WV | | |
| C306 | | | CE04CW1E4R7M | ELECTRO | 4.7UF | 25WV | | |
| C307 | | | CK45F1H103Z | CERAMIC | 0.010UF | Z | | |
| C308 | | | CE04CW1E4R7M | ELECTRO | 4.7UF | 25WV | | |
| C309 | | | CK45F1H104Z | CERAMIC | 0.10UF | Z | | |
| C310 | | | CK45F1H103Z | CERAMIC | 0.010UF | Z | | |
| C314 | | | CK45F1H103Z | CERAMIC | 0.010UF | Z | | |
| C315,316 | | | CK45F1H223Z | CERAMIC | 0.022UF | Z | | |
| C318 | | | CQ92M1H223J | MYLAR | 0.022UF | J | | |
| C319 | | | CK45F1H104Z | CERAMIC | 0.10UF | Z | | |
| C322,323 | | | CK45F1H103Z | CERAMIC | 0.010UF | Z | | |
| C324 | | | CK45B1H221K | CERAMIC | 220PF | K | | |
| C325 | | | CQ92M1H473J | MYLAR | 0.047UF | J | | |
| C326 | | | CC45CH1H100J | CERAMIC | 10PF | J | | |
| C327 | | | CE04CW1A101M | ELECTRO | 100UF | 10WV | | |
| C328 | | | CK45F1H223Z | CERAMIC | 0.022UF | Z | | |
| C329 | | | CE04CW1A101M | ELECTRO | 100UF | 10WV | | |
| C330-333 | | | CK45F1H223Z | CERAMIC | 0.022UF | Z | | |
| C334 | | | CE04CW1A101M | ELECTRO | 100UF | 10WV | | |
| C335 | | | CK45F1H223Z | CERAMIC | 0.022UF | Z | | |
| C336 | | | CE04CW1H100M | ELECTRO | 10UF | 50WV | | |
| C337 | | | CK45F1H223Z | CERAMIC | 0.022UF | Z | | |
| C338 | | | CQ92M1H393J | MYLAR | 0.039UF | J | | |
| C339 | | | CK45F1H473Z | CERAMIC | 0.047UF | Z | | |
| C341 | | | CK45F1H473Z | CERAMIC | 0.047UF | Z | | |
| C342-344 | | | CK45F1H103Z | CERAMIC | 0.010UF | Z | | |
| C345 | | | CE04CW1A221M | ELECTRO | 220UF | 10WV | | |
| C349 | | | CC45SL1H220J | CERAMIC | 22PF | J | | |
| C350 | | | CE04CW1H338M | ELECTRO | 0.33UF | 50WV | | |
| C351,352 | | | CK45F1H473Z | CERAMIC | 0.047UF | Z | | |
| C371 | | | CK45F1H104Z | CERAMIC | 0.10UF | Z | | |
| C372 | | | CE04CW1A101M | ELECTRO | 100UF | 10WV | | |
| C404,405 | | | CC45CH1H150J | CERAMIC | 15PF | J | | |
| C406,407 | | | CC45SL1H102J | CERAMIC | 1000PF | J | | |
| C408,409 | | | CK45F1H103Z | CERAMIC | 0.010UF | Z | | |
| C410,411 | | | CK45F1H223Z | CERAMIC | 0.022UF | Z | | |
| C412 | | | CK45F1H223Z | CERAMIC | 0.022UF | Z | | |
| C413 | | | CK45F1H103Z | CERAMIC | 0.010UF | Z | | |
| C414 | | | CK45F1H223Z | CERAMIC | 0.022UF | Z | | |
| C415 | | | CQ92M1H223J | MYLAR | 0.022UF | J | | |
| C501 | | | CE04CW1A471M | ELECTRO | 470UF | 10WV | | |
| C502,503 | | | CE04CW1A221M | ELECTRO | 220UF | 10WV | | |
| C504 | | | CE04CW1A471M | ELECTRO | 470UF | 10WV | | |
| C506,507 | | | CK45F1H223Z | CERAMIC | 0.022UF | Z | | |
| C513,514 | | ∗ | CQ93M2A392J | MYLAR | 3900PF | J | | |
| C515,516 | | ∗ | CQ93M2A471J | MYLAR | 470PF | J | | |
| C517,518 | | ∗ | CQ93M2A152J | MYLAR | 1500PF | J | | |
| C521,522 | | ∗ | CQ93M2A272J | MYLAR | 2700PF | J | | |
| C523,524 | | | CE04CW1C100M | ELECTRO | 10UF | 16WV | | |
| C525,526 | | | CQ92FM1H222J | MYLAR | 2200PF | J | | |
| C529,530 | | | CE04CW1H109M | ELECTRO | 1.0UF | 50WV | | |
| C901 | | | CE04CW1H478M | ELECTRO | 0.47UF | 50WV | | |
| C902 | | | CE04KW1C221M | ELECTRO | 220UF | 16WV | | |
| C903 | | | CE04CW1A101M | ELECTRO | 100UF | 10WV | | |

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# DP-M6010

## PARTS LIST

| Ref. No.<br>参照番号 | Address<br>位置 | New Parts<br>新 | Parts No.<br>部品番号 | Description<br>部品名／規格 | | | Desti-nation<br>仕向 | Re-marks<br>備考 |
|---|---|---|---|---|---|---|---|---|
| C904-907 | | ✳ | CE04CW1H470M | ELECTRO | 47UF | 50WV | | |
| C908,909 | | | CE04KW1C472M | ELECTRO | 4700UF | 16WV | | |
| C910,911 | | | CK45F1H223Z | CERAMIC | 0.022UF | Z | | |
| C912,913 | | | CE04KW1A102M | ELECTRO | 1000UF | 10WV | | |
| C914 | | | CK45F1H223Z | CERAMIC | 0.022UF | Z | | |
| C915 | | | CE04CW1A471M | ELECTRO | 470UF | 10WV | | |
| C916,917 | | | CK45F1H223Z | CERAMIC | 0.022UF | Z | | |
| C918 | | | CE04KW1A102M | ELECTRO | 1000UF | 10WV | | |
| C919 | | | CK45FB1H223K | CERAMIC | 0.022UF | K | | |
| C924 | | | CK45FB1H223K | CERAMIC | 0.022UF | K | | |
| C925 | | ✳ | CK45F2H103K | CERAMIC | 0.010UF | K | KP | |
| C925 | | ✳ | CK45F2H472K | CERAMIC | 4700PF | K | MXUUE | |
| J404 | | | 92198236 | SYSTEM CONTROL JACK | | | | |
| J501 | | ✳ | 92198295 | OUT PUT JACK | | | | |
| Z401 | | ✳ | 92153618 | CRYSTAL RESONATOR (67.738MHZ) | | | | |
| R201 | | ✳ | 92624231 | POTENTIOMETER 50KB | | | | |
| R333 | | ✳ | RN14GB2C561F | RN | 560 | F 1/6W | | |
| R334 | | ✳ | RN14GB2C562F | RN | 5.6K | F 1/6W | | |
| R364 | | ✳ | RD14CB2H159J | RD | 1.5 | J 1/2W | | |
| R380,381 | | | 92540776 | MULTI-COMP | 5.6KX4 | K | | |
| R382 | | ✳ | 92540818 | MULTI-COMP | 5.6KX3 | K | | |
| R383 | | ✳ | 92540779 | MULTI-COMP | 56KX4 | K | | |
| R384 | | | 92540776 | MULTI-COMP | 5.6KX4 | K | | |
| R901 | | ✳ | 90510058 | FUSE RESIST | 0.33 | J 1/2W | | |
| R902,903 | | | 90532109 | FUSE RESIST | 1.0 | J 1/2W | | |
| R912 | | | 92500271 | FUSE RESIST | 1 | J 1/4W | | |
| S201-233 | | ✳ | 92196961 | TACT SW(10KEY,STOP,PLAY,ETC) | | | | |
| D201-209 | | | 1SS133 | DIODE | | | | |
| D250 | | | TLS163 | LED | | | | |
| D281-283 | | | 1SS133 | DIODE | | | | |
| D301 | | | 1SS133 | DIODE | | | | |
| D302 | | | S5277B | DIODE | | | | |
| D304,305 | | | 1SS133 | DIODE | | | | |
| D401-406 | | | 1SS133 | DIODE | | | | |
| D901 | | | 1B4B41 | DIODE | | | | |
| D902-905 | | | 1SS133 | DIODE | | | | |
| D906 | | ✳ | 05AZ24 | ZENNER DIODE | | | | |
| D907-909 | | | 1SS133 | DIODE | | | | |
| N201 | | | FIP10BM19 | FLUORESCENT INDICATOR TUBE | | | | |
| Q201 | | ✳ | GP1U501X | IC(REMOTE SENSOR) | | | | |
| Q202 | | | UPC4570C | IC(OP AMP X2) | | | | |
| Q281 | | ✳ | TC4085BP | IC(INVERT GAIT X2) | | | | |
| Q282,283 | | | 2SC2458(GR) | TRANSISTOR | | | | |
| Q301 | | ✳ | TC9220F | IC(SERVO SIGNAL PROCESSOR) | | | | |
| Q302 | チュ〜B | ✳ | TC9221F | IC(DIGITAL SIGNAL PROCESSOR) | | | | |
| Q303 | | | TA8102P | IC(POWER DRIVER) | | | | |
| Q304 | | | TA7354P | IC(MOTOR DRIVER) | | | | |
| Q305 | | ✳ | TA8212F | IC(TRANSISTOR IC) | | | | |
| Q306 | | ✳ | NJM3404AD | IC(OP AMPX2) | | | | |
| Q307 | | | NJM2904D | IC(OP AMP) | | | | |
| Q308 | | | UPC4570C | IC(OP AMP X2) | | | | |
| Q309 | | | TA7354P | IC(MOTOR DRIVER) | | | | |

# PARTS LIST

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| Ref. No.<br>参照番号 | Address<br>位　置 | New Parts<br>新 | Parts No.<br>部　品　番　号 | Description<br>部　品　名／規　格 | Desti-nation<br>仕　　向 | Re-marks<br>備考 |
|---|---|---|---|---|---|---|
| Q310 | | ✻ | UPD75216ACW-239 | IC(MICROPROCESSOR) | | |
| Q311 | | ✻ | LC3514 | IC(LOGIC IC) | | |
| Q311 | | ✻ | UM6114 | IC(LOGIC IC) | | |
| Q312 | | ✻ | TC74HC164AP | IC(8BIT SHIFT REGISTER) | | |
| Q313 | | | CXK5816M | IC(2KX8 RAM) | | |
| Q314 | | | 2SC2878(B) | TRANSISTOR | | |
| Q315 | | | 2SC2458(GR) | TRANSISTOR | | |
| Q316 | | | 2SC2120(Y) | TRANSISTOR | | |
| Q317-319 | | | 2SC2458(GR) | TRANSISTOR | | |
| Q320-322 | | | 2SA1048(GR) | TRANSISTOR | | |
| Q324 | | | 2SA473(Y) | TRANSISTOR | | |
| Q325 | | ✻ | M51943BSL-T | IC(SYSTEM RESET) | | |
| Q401 | | | TC74HC174AP | IC(HEX D-TYPE FLIP FLOP) | | |
| Q402 | | | 2SC1923(0) | TRANSISTOR | | |
| Q403 | | | TC74HC74AP | IC(DUAL D-TYPE FLIP FLOP) | | |
| Q404 | | | TC74HCU04P | IC(HEX INVERTER) | | |
| Q405 | | | TC74HC74AP | IC(DUAL D-TYPE FLIP FLOP) | | |
| Q406 | | | 2SC2458(GR) | TRANSISTOR | | |
| Q501,502 | | | PCM56P | IC(DA CONVERTER) | | |
| Q503 | | ✻ | YM3414 | IC(DIGITAL FILTER) | | |
| Q504-506 | | | UPC4570C | IC(OP AMP X2) | | |
| Q507,508 | | | 2SK365(BL) | FET | | |
| Q509,510 | | | 2SC2878(B) | TRANSISTOR | | |
| Q901 | | | MC7808CT | IC(VOLTAGE REGULATORS/ +8V) | | |
| Q902,903 | | ✻ | MC7805CT | IC(VOLTAGE REGULATORS/ +5V) | | |
| Q904 | | | MC7905CT | IC(VOLTAGE REGULATORS/ +5V) | | |
| Q905,906 | | | 2SA1048(GR) | TRANSISTOR | | |
| Q907 | | | 2SC2458(GR) | TRANSISTOR | | |
| Q908 | | | 2SC2878(B) | TRANSISTOR | | |
| **MECHANISM ASS'Y** | | | | | | |
| 10 | 1D | ✻ | 90743222 | MAIN CHASSIS | | |
| 15 | 3C | ✻ | 92184254 | WIRE CLMPER | | |
| 16 | 1D | ✻ | 92171460 | WIRE HOLDER | | |
| 24 | 1C | ✻ | 90748584 | CABINET MOUNT HARDWARE | | |
| 25 | 1D | | 92199251 | FLEXIBLE PCB | | |
| 26 | 2C | | 90754364 | TRAY GUIDE(R) | | |
| 27 | 2C | | 90754365 | TRAY GUIDE(L) | | |
| 29 | 2D | | 90727246 | GEAR(TRAY LOAD-B) | | |
| 30 | 2A | ✻ | 95759205 | BELT(PICKUP DRIVE) | | |
| 31 | 2B | | 90723190 | DISK TABLE | | |
| 32 | 3A | | 90727229 | GEAR(CLUTCH) | | |
| 33 | 2A | | 90727230 | GEAR(RELAY SEARCH) | | |
| 34 | 3A | | 90727231 | GEAR(SEARCH TAC) | | |
| 35 | 3C | | 90727236 | GEAR (MIDDLE) | | |
| 36 | 2D | | 90727238 | GEAR (SLIDE) | | |
| 38 | 3B | | 95779797 | SPRING(RACK-PICKUP) | | |
| 39 | 2D | | 90727245 | GEAR(TRAY LOAD-A) | | |
| 40 | 1B | | 90741535 | SLIDER-LOCK-ASS | | |
| 41 | 1D | | 90748398 | ROLLER | | |
| 42 | 1D | | 90748409 | BRACKET BEARING | | |
| 43 | 2B | | 90754339 | TRAY SLIDER(A) | | |
| 44 | 1D | | 90754340 | SLIDER(DRIVE) | | |
| 45 | 2B | | 90754341 | TRAY SLIDER(B) | | |
| 46 | 1A | | 90754342 | LEVER(CLAMPER) | | |
| 47 | 1D | | 90754344 | SLIDER(A) | | |

E: Scandinavia & Europe　K: USA　　P: Canada

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# DP-M6010

## PARTS LIST

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| Ref. No. 参照番号 | Address 位　置 | New Parts 新 | Parts No. 部　品　番　号 | Description 部　品　名／規　格 | Desti-nation 仕　　向 | Re-marks 備考 |
|---|---|---|---|---|---|---|
| 48 | 2B | | 90754347 | LEVER(LOCK SEARCH) | | |
| 49 | 1C | | 90754348 | LOCK LEVER | | |
| 50 | 1C | | 90754349 | SLIDER(RETURN) | | |
| 51 | 1C | | 90754350 | LEVER(TRAY-IN) | | |
| 52 | 2C | | 90754359 | LEVER | | |
| 53 | 2C | | 90754366 | TRAY SLIDER | | |
| 54 | 1A | | 90754377 | LEVER(DISK STOP) | | |
| 55 | 1B | | 90754379 | LEVER(HOLD) | | |
| 56 | 2C | | 90754388 | SLIDE-W-LOCK | | |
| 57 | 3C | | 90757047 | DRIVE CAM | | |
| 58 | 1D | | 90757050 | CAM(CLAMPER) | | |
| 59 | 2C | | 90764381 | SHAFT | | |
| 60 | 1B | | 90764382 | PIN(SLIDER TRAY) | | |
| 61 | 1D | | 90764383 | PIN (SLIDER GEAR) | | |
| 62 | 2A | | 90764403 | CAM(ADJUST) | | |
| 63 | 1D | | 90764405 | ROLLAR SHAFT | | |
| 64 | 1C | | 90764435 | LEVER PIN(DISK) | | |
| 65 | 2C | | 90764436 | PIN(LOCK) | | |
| 66 | 2D | | 90764457 | CAM-PC-ADJ | | |
| 67 | 1D | ✳ | 90776192 | BRG-MOVE-ZN | | |
| 68 | 3B | ✳ | 92155247 | PICUP ASSY | | |
| 69 | 3A | | 95709714 | GEAR ASSY(SEARCH) | | |
| 70 | 3B | ✳ | 90764537 | SHAFT(A) | | |
| 71 | 3C | | 95758300 | PULLEY(RELAY) | | |
| 72 | 3C | | 95759147 | BELT | | |
| 73 | 3D | ✳ | 90751371 | CLAMP-LEV-ASSY | | |
| 74 | 2B | ✳ | 90764552 | SCREW(DRIVE-PCUP ASSY) | | |
| 75 | 2B | ✳ | 95777864 | SPRING(THRUST) | | |
| 76 | 1C | ✳ | 90776169 | CHASSIS SHEET | | |
| 77 | 2C | | 90776183 | MOTOR INSULATOR | | |
| 78 | 2D | ✳ | 95765211 | SPACER-DOWN-LMT | | |
| 79 | 2A | ✳ | 90748577 | PICKUP MOTOR HARDWARE | | |
| 80 | 2D | ✳ | 90776200 | FELT(12X14X0.5) | | |
| 81 | 2C | ✳ | 90748466 | TRAY ASSY | | |
| 82 | 2C | | 90776170 | FELT(TRAY) | | |
| 83 | 2A | ✳ | 90776205 | WASHER | | |
| 84 | 2B | ✳ | 90764538 | SHAFT(B) | | |
| 85 | 3D | | 90776178 | SWITCH SHEET | | |
| 86 | 2C | ✳ | 90776209 | DISK PROTECT | | |
| 87 | 3C | | 90776181 | FELT-P1 | | |
| 88 | 1D | | 95761521 | CUSHION(PU-STOP) | | |
| 89 | 1D | | 95761533 | CUSHION(STOPPER) | | |
| 90 | 2B | | 95761576 | CUSHION(PICKUP) | | |
| 91 | 2C | | 95761582 | CUSHION(RUBBER) | | |
| 92 | 1A | | 95770079 | SPRING(CLAMPER LEVER) | | |
| 93 | 3D | | 95770080 | SPRING(LEVER) | | |
| 94 | 1C | | 95770081 | SPRING(LOCK LEVER) | | |
| 95 | 1B,2B | | 95770088 | SPRING(SEARCH) | | |
| 97 | 2B | | 95770099 | SPRING(D-H-LEVER) | | |
| 98 | 3B | ✳ | 90727300 | PICKUP | | |
| 99 | 2B | | 95777708 | SPRING(CENTER RING) | | |
| 100 | 3A | | 95777723 | SPRING(CLUTCH) | | |
| 101 | 1B,1D | | 95777748 | SPRING(CLAMPER ADJ) | | |
| 102 | 3C | | 95778580 | LOCK WASHER SPRING | | |
| 103 | 1C | | 95778617 | SPRING(MAGAZINE) | | |

# DP-M6010    DP-M6010

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|---|---|---|---|---|---|---|
| 104 | 3B | * | 90754441 | LEVER(PUSH-SLT) | | |
| 105 | 1A | | 95779700 | SPRING(CLAMPER) | | |
| 106 | 1C | * | 90776190 | INSULATOR | | |
| 107 | 2A | | 90751370 | LINK-SYNC-A-ASSY | | |
| 108 | 1C | | 90741496 | MAGAZINE PLATE ASSY | | |
| 109 | 3A | * | 90741594 | MNT-M-UNIT-ASS | | |
| 110 | 3C | | 90741497 | MOTOR MOUNT HARDWARE | | |
| 111 | 2D | | 90741498 | MOUNT HARDWARE | | |
| 112 | 2A | * | 90741522 | PLT-HLD-T-ASSY | | |
| 113 | 1D | | 90743228 | RF AMP | | |
| 114 | 1A | | 90747032 | HOLDER(TRAY) | | |
| 115 | 3C | | 90748172 | MOTOR SPACER | | |
| 116 | 1D | * | 90748440 | PLATE-CLAMP-SPT | | |
| 117 | 2B | * | 90747038 | HOLDER(SHAFT-A) | | |
| 118 | 2B | * | 90747039 | HOLDER(SHAFT-B) | | |
| 119 | 1D | * | 90748495 | MAIN CHASSIS PLATE | | |
| 120 | 2C | * | 90749156 | TRAY PLATE | | |
| 121 | 2A | | 90751366 | LINK-SYNC-B-ASSY | | |
| 123 | 1A | | 90764380 | PIN(LEVER CLAMPER) | | |
| 124 | 1B | | 90764442 | BUSH(/1.5) | | |
| 125 | 1B | | 90764444 | BUSH(LOCK SLIDER) | | |
| 126 | 2A | | 90773397 | SLEEVE(A) | | |
| 127 | 2B | | 90773424 | COLLAR(TRAY) | | |
| 128 | 2A | | 90776160 | BEARING(SEARCH) | | |
| 129 | 2B | * | 90747042 | HOLDER(SHAFT-C) | | |
| 130 | 3B | * | 90747043 | HOLDER(SHAFT-D) | | |
| 131 | 1C | * | 95783260 | BUSH | | |
| 132 | 2B | * | 90747044 | HOLDER(WIRE) | | |
| 133 | 2B,3B | * | 95735303 | WASHER(2X3X0.5) | | |
| 134 | 3B | * | 92708419 | SCREW | | |
| 135 | 2B | * | 90748575 | PICKUP CHASSIS | | |
| 136 | 2B | | 90776162 | RING CENTER | | |
| 137 | 3B | | 92701285 | SCREW(2.6X6) | | |
| 138 | 1B | | 92702216 | NUT | | |
| 139 | 2A | | 92703470 | U-E-WAHWER-2 | | |
| 140 | 2C | | 92703472 | U-E-WAHWER-1.5 | | |
| 141 | 2A | | 92708523 | SCREW(2X3) | | |
| 142 | 1C,1D | | 92707366 | SCREW(2.6X6) | | |
| 143 | 2A | | 92707429 | SPECIAL SCREW(2.6X4.9) | | |
| 144 | 2D | | 92707617 | SCREW(2.6X3) | | |
| 145 | 2B | | 92707680 | SCREW(1.7X3) | | |
| 146 | 1A | | 92707825 | SCREW(2.6X6) | | |
| 147 | 3D | | 92707894 | SPECIAL SCREW(3X6) | | |
| 148 | 1A | | 92707913 | SCREW(2.6X6) | | |
| 149 | 1A,2A | | 92707979 | SCREW(2.6X8) | | |
| 150 | 2B | | 92708271 | SCREW(MECHANISM) | | |
| 151 | 3C,3D | | 92708382 | SCREW(2.6X3) | | |
| 152 | 1D | | 92708525 | SCREW(2.0X5) | | |
| 153 | 1C,3C | | 92708528 | SCREW(2.6X3) | | |
| 154 | 1B | | 92708533 | SCREW(2.6X8) | | |
| 155 | 3D | | 92708561 | WASHER(2.6) | | |
| 156 | 1A,1B | | 95735288 | E WASHER(3) | | |
| 157 | 3D | | 92708570 | E WASHER(4) | | |
| 158 | 1C | | 92708576 | SCREW(2X10) | | |
| 159 | 2B | | 92708599 | SCREW(2.6X5) | | |

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# DP-M6010    DP-M6010

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|---|---|---|---|---|---|---|
| 160 | 1D | * | 92708716 | SCREW(2.6X12) | | |
| 161 | 2B | * | 92708150 | SCREW(2.6X14) | | |
| 162 | 2B,3B | | 92708405 | SCREW(2.6X10) | | |
| 163 | 2A | | 92708820 | SCREW(2.6X20) | | |
| 164 | 2D | | 92708827 | SCREW(2.6X8) | | |
| 165 | 3C | | 92709084 | SCREW(2X10) | | |
| 166 | 2C | | 92709085 | SCREW(2X6) | | |
| 167 | 2D | | 92709086 | SCREW(3X3) | | |
| 168 | 3C | | 92709093 | SCREW(2.6X6) | | |
| 169 | 3A | | 95735281 | E WASHER (2mm) | | |
| 170 | 2D | | 95766050 | WASHER | | |
| 171 | 2A,2D | | 95766150 | WASHER(3.1X6X0.25) | | |
| 172 | 3D | | 95766189 | WASHER(5.2X10X0.5) | | |
| 173 | 2A,3A | | 95766199 | WASHER(2.1X4.5X0.4) | | |
| 174 | 3C | | 95766229 | WASHER(1.5X5X0.5) | | |
| 175 | 3C | | 95770089 | SPRING | | |
| 176 | 3B | | 92708531 | SCREW(2.6X5) | | |
| 177 | 3A | | 95766480 | WASHER(3X4.35X0.13) | | |
| 178 | 2B,3B | | 92707322 | SCREW(2X10) | | |
| 179 | 2B | | 95766082 | TO 401 WASHER (2X3X0.25) | | |
| 180 | 3C | * | 92125902 | ASSIST MOTOR | | |
| 181 | 2B | * | 92125945 | PICUP MOTOR ASSY | | |
| 182 | 2C | * | 92125903 | LOADING MOTOR | | |
| L102 | 1C | | 92147298 | SOLENOID | | |
| S101,102 | 1D | | 92108046 | SWITCH | | |
| S103-109 | 1A,1C | | 92108047 | SWITCH | | |

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# DP-M6010

# SPECIFICATIONS

## [Format]

Type: ............................ Compact disc player
Read system: .................... Non-contact optical pickup
Rotational speed: ............... About 200 to 500 rpm

## [Audio]

Frequency responce: ......... 10 Hz ~ 20 kHz, ±1.0 dB
Dynamic range: ............... More than 95 dB at 1 kHz
Signal-to-noise ratio: ......... More than 102 dB
Total harmonic distortion: . Less than 0.006% at 1 kHz
Channel separation: .......... More than 95 dB at 1 kHz
Wow & flutter: ............... Unmeasureble Limit
Output
  LINE (FIXED): ................ 2.0 V/440 Ω
  Headphone jack: ........... 2 mW/100 Ω

## [General]

Power consumption: ......... 15 W
Maximum dimensions: ...... W: 440 mm (17-5/16'')
                            H: 119 mm (4-11/16'')
                            D: 352 mm (13-7/8'')
Weight: .......................... 6.8 kg (15 lb.)

Note: ─────────────────────────────────────────────
KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.